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Understand Millions

1. A bowl holds 100 peanuts. How many bowls would hold a million peanuts?

3. If you save 10¢ a day, how many days would it take to save a million cents?

5. If you read 100 pages a week, how many weeks would it take you to read a million pages?

7. How many dimes are in one hundred dollars?

2. How many cents would you have saved if you saved one hundred dollars?

4. If you eat 10 apples a month, how many apples do you eat in a year?

6. If water pours into an empty fish pond at 10 gallons a minute, how many minutes does it take to fill the 10,000 gallon pond?

8. If you earn $10 a week, how many weeks would it take to earn one hundred dollars?

Mixed Review

9. $17 + 98$ ______
10. $85 - 58$ ______
11. $56 \times 7$ ______

12. $25 \times 5$ ______
13. $95 \times 2$ ______
14. $11 \times 2$ ______

15. $237 + 63$ ______
16. $468 - 9$ ______
17. $314 + 9$ ______

18. $324 - 32$ ______
19. $418 - 21$ ______

20. $603 - 27$ ______
21. $257 + 5$ ______
22. $354 + 236$ ______

23. $716 + 931$ ______
24. $480 - 139$ ______
**Millions and Billions**

Write the value of the **boldfaced** digit.

1. 301,724,469  
2. 426,379,831  
3. 234,567,890

4. 189,612,357  
5. 521,874,394  
6. 3,794,216,055

Write each number in two different ways.

7. 125,740,689

8. 200,403,926

9. 5,248,663,711

10. eight hundred ninety-five million, four hundred sixty thousand, two hundred twenty-five

**Mixed Review**

Write the factors.

11. 15  
12. 36  
13. 27

Solve.

14. Write the next 3 numbers in this pattern. 8, 12, 16, 20

15. Write the value of the **boldfaced** digit in 745,229.
Compare Numbers

Start at the left. Name the first place-value position where the digits differ. Name the greater number.

1. 1,799,347; 1,797,221
2. 3,555,782,400; 2,639,221,856
3. 97,145,346; 97,245,375

4. 4,670,256,112; 4,569,247,221
5. 34,910,023; 34,910,295
6. 6,783,945,203; 6,782,943,290

7. 823,579,044; 823,579,043
8. 749,566,001; 759,566,000
9. 56,239,448; 56,217,456

10. 967,442,011; 967,442,021
11. 4,226,599,675; 4,326,738,902
12. 5,266,903; 5,266,993

Compare. Write <, >, or = in each □.

13. 345,922 □ 34,592
14. 275,669,128 □ 275,669,129
15. 44,576,493 □ 44,577,497
16. 67,387 □ 67,256
17. 55,377,294 □ 55,377,294
18. 935,771,220 □ 935,771,212
19. 3,456,197,203 □ 3,456,197,203
20. 1,366,792,014 □ 1,266,457,209
21. 77,032,665 □ 77,932,440
22. 2,767,394,201 □ 2,769,341,222
23. 811,564,007 □ 811,566,290
24. 5,567,294,007 □ 5,567,294,007

Mixed Review

25. 48 ÷ 4 □
26. 75 + 19 □
27. 55 − 29 □
28. 7 × 8 □
Order Numbers

Order from greatest to least.

1. 2,647; 217,553; 23,667
2. 295,254; 386,407; 385,245
3. 16,450; 16,399; 16,576;
4. 2,735; 28,362; 532
5. 1,750,439; 1,750,419; 1,750,506
6. 5,064; 5,245; 6,001
7. 676,259; 733,157; 7,892
8. 669,345,201; 669,345,903; 668,544,201

Order from least to greatest.

9. 7,674; 7,773; 7,978
10. 690,699; 275,789; 544,266
11. 1,300,546; 1,259,708; 1,259,456
12. 43,857; 45,019; 44,777
13. 5,060,560; 5,052,300; 5,053,980
14. 87,315; 97,229; 78,999
15. 56,275,988; 56,275,703; 56,295,148
16. 453,097,111; 473,095,477; 452,555,439

Mixed Review

17. $8 \times 8 _____  
18. $48 \div 8 _____  
19. $49 - 16 _____  
20. $57 + 19 _____  
21. $62 - 44 _____  
22. $5 \times 12 _____  
23. $84 + 12 _____  
24. $45 \times 2 _____  
25. Write nine billion, seven hundred million, forty-five thousand, three hundred six in standard form. ___________________
Problem-Solving Skill
Use a Table

For 1–6, use a table.

1. Which state has the greatest population?

<table>
<thead>
<tr>
<th>STATES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Population</td>
</tr>
<tr>
<td>Arkansas</td>
<td>2,538,303</td>
</tr>
<tr>
<td>California</td>
<td>32,666,550</td>
</tr>
<tr>
<td>Georgia</td>
<td>7,642,207</td>
</tr>
<tr>
<td>Illinois</td>
<td>12,045,326</td>
</tr>
</tbody>
</table>

2. Which state has a population of eight million when rounded to the nearest million?

3. Which states have populations greater than 10,000,000?

4. This table shows some of the major cities in California and their populations. Order the cities from greatest to least population.

<table>
<thead>
<tr>
<th>CALIFORNIA CITIES</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td></td>
</tr>
<tr>
<td>San Diego</td>
<td>1,110,549</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>3,485,398</td>
</tr>
<tr>
<td>Long Beach</td>
<td>429,433</td>
</tr>
<tr>
<td>San Francisco</td>
<td>723,959</td>
</tr>
</tbody>
</table>

5. Which city has a population of about one million?

6. Which city’s population is about 300,000 more than Long Beach’s population?

Mixed Review
Compare. Write <, or > in each circle.

7. 563 ___ 653
8. 975 ___ 946
9. 432 ___ 412
10. 294 ___ 314
11. 506 ___ 560
12. 813 ___ 381
Tenths and Hundredths

Write as a decimal and a fraction or mixed number.

1. 2. 3. 4. 5.

5. \( \frac{7}{10} \)

6. \( \frac{0.03}{100} \)

7. sixty-five hundredths

8. four and three tenths

9. seven and twenty-two hundredths

Write the missing decimal in each pattern. Describe the pattern.

10. 0.15, 0.30, 0.45, \( \square \), 0.75

11. 1.12, 1.04, 0.96, \( \square \), 0.80, 0.72

12. 2.07, 2.14, \( \square \), 2.28

13. 0.1, 0.5, \( \square \), 0.13, 0.17

Mixed Review

14. \( \frac{99}{3} \)

15. \( 11 \times 7 \)

16. \( 292 \div 308 \)

17. \( 934 - 349 \)

18. Write five billion, three hundred fifty-seven million in standard form.

19. Write the value of boldfaced digit in 4,593,678,002.

Order from least to greatest.

20. 518,808; 518,388; 518,838

21. 64,460,144; 64,660,114; 64,604,111
Thousandths and Ten-Thousandths

Write each decimal in expanded form, in word form, and as a fraction.

1. 2.089
2. 4.1967

3. 3.504
4. 0.6045

Write in standard or expanded form.

5. fifteen thousandths
6. one and forty-seven ten-thousandths

7. 1.808
8. 7.0541
9. 2.638
10. 3.8279

Write in word form.

11. 4.0017
12. 12.683
13. 0.5983
14. 31.234

Mixed Review

15. 789 + 426
16. 710 − 268
17. 56 ÷ 7
18. 39 × 4
Equivalent Decimals

Write equivalent or not equivalent to describe each pair of decimals.

1. 6.4 and 6.40
2. 2.08 and 2.008
3. 5.090 and 5.09
4. 1.0050 and 1.005
5. 3.006 and 3.060
6. 0.07 and 0.70

Write an equivalent decimal for each number.

7. 1.2
8. 3.71
9. 0.060
10. 6.200

11. 3.450
12. 4.15
13. 2.4
14. 7.30

Write the two decimals that are equivalent.

15. 3.01050
16. 0.005
17. 0.101
18. 2.808

19. 3.01005
20. 0.050
21. 0.1010
22. 2.8008

23. 3.0105
24. 0.0050
25. 0.1001
26. 2.80080

Mixed Review

19. 1,235 – 465
20. 5,605 + 2,487
21. 12 × 8
22. 42 ÷ 6

23. Write 42,765,249 in word form.
24. Write six and seven thousand, four hundred thirty-three thousandths in standard form.
Compare and Order Decimals

Write $<$, $>$, or $=$ in each $\bigcirc$. Use the number line.

1. 3.622 \bigcirc 3.262
2. 3.201 \bigcirc 3.021
3. 3.597 \bigcirc 3.63
4. 3.309 \bigcirc 3.42
5. 3.545 \bigcirc 3.455
6. 3.152 \bigcirc 3.251

Write $<$, $>$, or $=$ in each $\bigcirc$.

7. 0.25 \bigcirc 0.23
8. 46.564 \bigcirc 46.652
9. 7.21 \bigcirc 7.210
10. 627.35 \bigcirc 627.53
11. 368.58 \bigcirc 368.85
12. 237.524 \bigcirc 237.254
13. 736.54 \bigcirc 736.540
14. 16.2 \bigcirc 16.200
15. 878.787 \bigcirc 878.878

Order from least to greatest.

16. 7.11, 7.09, 7.07
17. 12.54, 12.45, 12.65
18. 3.020, 3.002, 3.200
19. 17.560, 17.065, 17.056
20. 2.654, 2.546, 2.456, 2.465

Mixed Review

21. $72 \div 8$
   \[ \begin{array}{c}
   \underline{\phantom{1}} \\
   472
   \end{array} \]
22. $1,630$
   \[ \begin{array}{c}
   \underline{\phantom{1}} \\
   \phantom{1}
   \end{array} \]
23. $9 \times 6$
24. $1,498 + 2,645$

25. Write six and twenty-seven hundredths as a decimal and a fraction.

26. Write 8.1406 in word form.

27. Write ninety-five million, two hundred six thousand, eleven in standard form.

28. Write 31,125,624.6 in expanded form.
Problem-Solving Skill

Draw Conclusions

Can the conclusion be drawn from the information given? Write yes, no, or maybe. Explain your choice.

At the class party, Mr. Conner asked his math students to guess how many pennies were in a jar. The top five students whose guesses were the closest to the actual number were as follows: Charles 375, Juan 350, Carmen 360, Ann 373, and Bill 395. There was only one winner and that student missed by 5 pennies.

1. There were over 344 pennies in the jar.  
2. The actual number of pennies was between 350 and 395.

3. If Bill is the winner, the actual number of pennies was 400.  
4. The actual number of pennies was not 355.

Mixed Review

Solve.

5. Sal and Alice planted trees for the Forestry Service. Last weekend Sal planted 113 trees, and Alice planted 96 trees. How many more trees did Sal plant than Alice?

6. Cheryl wants to put a border around her window. The window is 3 feet wide and 5 feet high. How much border does she need to go around the window?
Round Whole Numbers

Round each number to the place of the bold-faced digit.

1. 105,509  2. 7,485,762  3. 34,988  4. 47,567  5. 61,244

6. 72,832  7. 9,355,722  8. 563,044  9. 428,995  10. 27,549,105

Round 73,127,849 to the place named.

11. millions  12. tens  13. ten thousands

14. thousands  15. hundred thousands  16. ten millions

Name the place to which each number was rounded.

17. 76,145 to 76,000  18. 495,346 to 500,000  19. 5,927 to 5,930

20. 4,901,216 to 4,901,200  21. 9,347,002 to 9,350,000  22. 1,555,299 to 2,000,000

Mixed Review

23. 482 ÷ 785  24. 761 − 282  25. 9 × 7  26. 36 ÷ 6

27. Order the decimals 0.435, 0.043, and 0.450 from greatest to least.

28. Write the value of the bold-faced digit: 2.0541.

29. Write 16.8072 in expanded form.
Estimate Sums and Differences

Estimate by rounding.

1. \(267,335 + 492,177\)
2. \(539,369 + 91,136\)
3. \(555,411 - 202,302\)
4. \(6,110,785 - 3,385,142\)

5. \(1,665,499 + 433,801\)
6. \(838,624 - 157,240\)
7. \(476,428 + 224,800\)
8. \(7,587,057 - 3,569,882\)

9. \(324,966 + 474,022\)
10. \(828,477 - 498,549\)
11. \(546,239 - 196,874\)
12. \(495,106 - 271,392\)
13. \(3,428,687 + 5,680,952\)
14. \(281,978 + 44,477\)

Estimate to compare. Write \(>\) or \(<\) for each \(\bigcirc\).

15. \(65,322 + 24,801 \bigcirc 69,595 + 32,783\)
16. \(402,602 - 159,600 \bigcirc 398,011 - 274,261\)
17. \(751,493 - 112,302 \bigcirc 775,029 - 272,886\)
18. \(622,367 + 92,945 \bigcirc 840,926 - 114,609\)
19. \(85,493 - 32,302 \bigcirc 75,029 - 42,886\)
20. \(473,163 + 50,498 \bigcirc 502,931 + 83,641\)

Mixed Review

21. Order the numbers 3.01; 3.011; 3.0012; 3.120; and 3.110 from greatest to least.

22. Write 53.2818 in word form.
Add and Subtract Whole Numbers

Find the sum or difference. Estimate to check.

1. $3,964 + 2,489$
2. $12,033 - 7,566$
3. $9,209 - 7,644$
4. $5,439 + 4,053$

5. $17,848 + 24,189$
6. $45,178 + 18,433$
7. $7,428 - 4,119$
8. $39,702 + 3,589$

9. $96,260 - 45,779$
10. $21,816 + 42,112$
11. $61,422 + 28,919$
12. $42,631 + 9,687$

13. $226 + 339 + 498$
14. $7,018 - 965$
15. $26,253 + 13,348$

16. $59,607 - 23,423$
17. $15,046 - 4,699$
18. $41,212 + 19,309$

19. $1,406 + 871 + 521$
20. $91,233 - 38,877$
21. $612 + 964 + 1,107$

Mixed Review

22. $72 ÷ 8$
23. $12 × 6$
24. $8 × 8$
25. $48 ÷ 12$

26. Name the greater number: $5,675,893$ or $5,675,983$.

27. Write thirty-nine and three thousand, nine hundred forty-seven ten-thousandths in standard form.

28. Round $5,347,299$ to the nearest ten thousand.

29. Write $<$, $>$, or $=$ in $\bigcirc$.

$418.8342 \bigcirc 418.8432$
Add and Subtract Greater Numbers

Find the sum or difference. Estimate to check.

1. 1,216,783 + 3,876,121 = 5,105,074
2. 5,698,522 − 4,301,056 = 1,397,466
3. 5,460,900 − 652,294 = 4,808,606
4. 9,056,357 − 410,652 = 8,645,705

5. 5,677,398 + 2,211,545 = 7,888,943
6. 9,045,063 − 904,506 = 8,140,557
7. 2,260,577 + 7,739,533 = 10,000,110
8. 8,324,756 + 593,664 = 8,918,420

9. 8,366,645 − 2,633,193 = 5,733,452
10. 6,761,250 + 8,488,329 = 15,249,579
11. 31,234,329 + 48,283,517 = 79,517,846
12. 19,880,441 − 7,582,299 = 12,298,142

13. 6,088,197 − 2,870,034 = 3,218,163
14. 2,673,452 + 6,333,247 = 9,006,700
15. 8,986,899 − 3,545,999 = 5,440,900
16. 7,005,088 + 681,374 = 7,686,462
17. 4,141,114 − 371,173 = 3,770,941
18. 5,027,405 + 3,765,323 = 8,792,728

Mixed Review

19. Order the decimals 1.0450, 1.0045, 1.1045, 1.0050, 1.0004 from least to greatest.

20. Write the decimal 498.036 in word form.

21. Round 4,743,996 to the place of the bold-faced digit.

22. Write 2,000,000 + 600,000 + 8,000 + 300 + 30 + 0.08 in standard form.

23. Name the place 843,907 to 844,000 was rounded.

24. Write > or < for 98,311 − 40,298 15,518 + 44,982
Problem-Solving Strategy

Use Logical Reasoning

Use logical reasoning to solve.

1. Mark, Christina, Nick, and Julio each bought a different color pencil at the bookstore. The colors were blue, red, yellow, and green. Nick's and Julio's pencils are colors on the United States' flag. Christina's pencil is bright like the sun, and Julio's is the color of the sky. Which pencil did each person buy?

2. Five students, Maria, Ivan, Leah, Julie, and Scott measured each other’s heights for health class. The heights are 42, 39, 41, 37, and 39 inches. Julie is 2 inches shorter than Leah. Maria is 1 inch shorter than Scott and 2 inches taller than Leah. How tall is each student?

Mixed Review

3. Mari scored twice as many points in the second half of the basketball game as she did in the first half. She scored 24 points in the second half. How many points did Mari score in the whole game?

4. The Hobbs family had to travel 856 miles to get back home after their vacation. In the past two days they have traveled 413 miles and 269 miles. How many more miles does the Hobbs family have to travel to get back home?

5. Marsha bought a mountain bike on sale for $112.56 plus $6.75 tax. The regular price was $149.99 including tax. How much did Marsha save?

6. Last winter it snowed 12.9 cm in December, 17.4 cm in January, 16.9 cm in February, and 8.6 cm in March. In which month did the most snow fall?
Round Decimals

Round each number to the place of the **boldfaced** digit.

1. 3.276
2. 12.63
3. 0.4870
4. 15.3847
5. 8.69

6. 20.5956
7. 11.323
8. 7.9093
9. 4.2899
10. 7.5475

Round 4.5227 to the place named.

11. tenths
12. thousandths
13. hundredths
14. ones

Name the place to which each number was rounded.

15. 12.35 to 12.4
16. 0.4288 to 0.429
17. 9.462 to 9.46

18. 5.0999 to 5
19. 4.6837 to 4.68
20. 6.29385 to 6.294

Mixed Review

21. \( \frac{8}{6} \) 22. \( \frac{9}{4} \) 23. \( \frac{7}{3} \) 24. \( \frac{6}{6} \) 25. \( \frac{9}{7} \)

26. Write 7.0051 in word form.

27. Write an equivalent decimal for 6.0250.

28. Order 2.37, 2.73, 2.46, and 2.64 from least to greatest.

29. 1,245,589 – 224,245

30. \( \frac{2}{5} \) 31. \( \frac{8}{8} \) 32. \( \frac{3}{6} \) 33. \( \frac{9}{5} \) 34. \( \frac{6}{7} \)
Estimate Decimal Sums and Differences

Estimate the sum or difference to the nearest whole number or dollar.

1. 6.45
   2. 7.32
   3. $7.68
   4. 18.07
   5. 27.36
   - 2.81
   - 5.14
   + 3.52
   + 11.66
   - 15.04

Estimate the sum or difference to the nearest tenth.

6. 1.285
   7. 2.843
   8. 4.060
   9. 6.341
   10. 2.578
   + 0.822
   + 7.158
   - 3.724
   - 1.636
   - 0.372

Estimate to compare. Write < or > in each circle.

11. 7.21 - 5.56  6.89 - 2.34
12. 4.73 + 3.29  5.32 + 2.39
13. 9.213 + 4.764  8.345 + 6.754
14. 36.84 - 15.49  58.94 - 37.99
15. 45.76 + 21.84  32.98 + 34.05
16. 52.85 + 34.76  46.34 + 39.82
17. 9.034 - 4.571  7.562 - 2.199
18. 6.045 - 2.374  8.461 - 5.921

Mixed Review

20. Round 34.6487 to the nearest hundredth.

21. Find the value of $n$ in $47 + n = 185$.
22. Evaluate $125 + n$ if $n$ is 67.

23. Which 5 has the least value?

   A  2.519
   B  5.189
   C  10.259
   D  13.075

24. Which number is twelve million, two thousand written in standard form?

   F  12,200,000
   G  12,002,000
   H  1,202,200
   J  1,200,200
Add and Subtract Decimals

Find the sum or difference. Estimate to check.

1. 2.7 + 1.1 = 3.8
2. 7.568 + 3.405 = 10.973
3. 42.35 + 6.81 = 49.16
4. 11.79 + 15.02 = 26.81
5. 13.75 + 2.10 = 15.85
6. 7.5 + 2.3 = 9.8
7. 6.38 + 8.12 = 14.5
8. 4.054 + 7.285 = 11.339
9. 22.35 + 11.86 = 34.21
10. 3.817 + 5.417 = 9.234

11. 8.59 - 2.34 = 6.25
12. 9.8 - 2.3 = 7.5
13. 6.27 - 0.83 = 5.44
14. 12.362 - 8.18 = 4.182
15. 10.98 - 1.29 = 9.69
16. 3.1 - 1.7 = 1.4
17. 6.14 - 4.81 = 1.33
18. 15.09 - 8.73 = 6.36
19. 39.47 - 22.29 = 17.18
20. 68.17 - 32.51 = 35.66

21. 22.12 - 6.78 = 15.34
22. 21.599 - 17.369 = 4.23
23. 8.376 - 2.109 = 6.267
24. 10.05 + 2.78 = 12.83
25. 678 + 3.410 = 701.41
26. 8.9 + 7.25 + 5.42 = 21.57

Mixed Review

27. Round 24.579 to the nearest hundredth.
28. 245,681 + 1,098,810

29. Order 12.1, 12.34, 12.43, and 12.5 from greatest to least.
30. Which is greater, twenty-seven thousandths or fourteen hundredths?

31. 739 + 621 + 667 = 1,027
32. 7,232 + 946 + 31 = 8,169
33. 2,780 + 9,621 + 3,221 = 15,622
34. 8,869 + 4,500 + 399 = 13,768
Zeros in Subtraction

Find the difference.

1. 2.5 2. 3.4 3. 2.04 4. 3.6 5. 3.5
   - 0.8 - 3.1 - 1.7 - 2.7 - 1.04

6. 1.6 7. 4.8 8. 3.07 9. 4.2 10. 6.7
   - 0.8 - 4.2 - 2.8 - 3.8 - 2.02

11. 3.87 12. 2.7 13. 5.426 14. 12.507 15. 10.069
    - 1.362 - 1.824 - 2.56 - 4.315 - 2.253

16. 4.68 17. 3.2 18. 7.264 19. 16.852 20. 17.57

21. 2.06 - 1.17 = _____ 22. 1.7 - 0.763 = _____ 23. 2.85 - 1.9 = _____

24. 3.7 - 2.68 = _____ 25. 2.4 - 1.468 = _____ 26. 3.1 - 2.51 = _____

27. 3.68 - 1.892 = _____ 28. 5.2 - 3.181 = _____ 29. 6.42 - 3.374 = _____

30. 4.21 - 2.362 = _____ 31. 7.3 - 4.226 = _____ 32. 5.69 - 2.473 = _____

Mixed Review

For 33–35, use the table.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter horse</td>
<td>47.5 mph</td>
</tr>
<tr>
<td>Greyhound</td>
<td>39.35 mph</td>
</tr>
<tr>
<td>Human</td>
<td>27.89 mph</td>
</tr>
<tr>
<td>Snail</td>
<td>0.03 mph</td>
</tr>
</tbody>
</table>

33. The maximum speeds of animals over one-quarter mile varies greatly. What is the difference between the fastest and the slowest animal?

34. How much faster is a greyhound than a human?

35. In the snail's speed, what is the place value of the 3?
**Problem Solving Skill**

**Estimate or Find Exact Answer**

Decide whether you need an exact answer or an estimate. Then solve.

1. Ben received $10.00 for doing chores. He wants to buy some cards for $2.89, an action figure for $4.99, and a comic book for $1.79. Does he have enough to pay for all three items?

2. Yasmin received $50.00 for her birthday. She wants to buy a sweater for $13.99, a necklace for $14.95, and shoes for $19.98. How much change will she receive?

Kathy wants to buy some roses for $6.99, some potting soil for $3.98, and a ceramic pot for $7.95. She has $20.00.

3. Which question about Kathy’s shopping can be answered with an estimate?
   - A Does she have enough money for all 3 things?
   - B How much will she pay in all?
   - C How much change will she get?
   - D Which item costs the least?

4. Which question represents Kathy’s change?
   - F $18.92 – $14.94 = $3.98
   - G $6.99 + $3.98 + $7.95 = $18.92
   - H $20 – $18.92 = $1.08
   - J $20 – $1.08 = $18.92

**Mixed Review**

Solve.

5. Walt bought a CD player on sale for $99.95 plus $4.99 tax. The regular price was $149.99 including tax. How much did Walt save?

6. Emma spent $4 on cards and $18 on a sweater. Emma has $9 left. How much did Emma begin with?

7. In an even 2-digit number, the second digit is 3 times the first. What is the number?

8. Don is a cashier. When he calculates the amount of change, does he want an estimate or the exact answer?
Expressions and Variables

Write an expression. Find the value.

1. Mark had 6 books. He bought 5 more.
   6 + 5 = 11

3. Lillian got 3 letters in the mail. The next day she got 7 more.
   3 + 7 = 10

Write an expression with a variable. Explain what the variable represents.

5. TJ had 14 pet fish. He bought some more.
   f + 14 = number of pet fish

6. Alex picked 25 apples. He ate some.
   n + 25 = number of apples

Find the value of the expression.

7. \( n + 37 \) if \( n = 16 \)
   16 + 37 = 53

8. \( 234 + n \) if \( n = 66 \)
   234 + 66 = 300

For 9–10, choose the expression for each situation.

9. Joy rode down 5 floors on the elevator, and then rode up 3 floors.
   A \( f - 5 + 3 \)  B \( f + 5 - 3 \)

   C \( 5 + 3 = f \)  D \( f - 5 = 3 \)

10. Kim ate 3 of the 12 cookies, and then baked some more.
   F \( 3 + 12 = n \)  H \( 12 - n = 3 \)

   G \( 12 - 3 + n \)  J \( 12 - 3 = n \)

Mixed Review

11. Use mental math to find the sum.
    \( 10 + 60 + 200 + 1000 \)

12. Write a number between 1.0 and 1.4
    \[ \frac{10}{10} \]
Write Equations

Write an equation. Explain what the variable represents.

1. Rick wants to read 52 books this year. He has already read 24 books. How many more should he read?

2. Jon went to the pet store and saw 24 animals. Fourteen were dogs and 3 were hamsters. How many animals did he see?

3. There were 38 students in the choir. After 3 of the students moved away and 10 new students joined, how many students were in choir?

4. The buses departed with 39 students aboard. 32 waited for another bus. How many students are riding the bus?

5. Seven people joined the soccer team. The rest joined the softball team. There were 20 people that joined either the soccer or softball team. How many people joined the softball team?

6. Theater group was performing on Friday and Saturday night. Three hundred and twenty four came on Friday. Thirty three more came on Saturday. How many people saw the show?

Write a problem for the equation. State what the variable \( n \) represents.

7. \( 54 - n = 24 \)  
8. \( n + 20 = 70 \)  
9. \( 5 + n - 3 = 10 \)

10. \( 4 + n = 12 \)
11. \( 80 + n = 100 \)
12. \( n + 36 = 80 \)

Mixed Review

13. \( 23 + 12 \)
14. \( 56 + 12 \)
15. \( 73 + 12 \)
16. \( 90 - 80 \)
17. \( 34 - 23 \)
18. \( 15 + 73 \)
19. \( 45 - 34 \)
20. \( 23 + 32 \)

PW22 Practice
Solve Equations

Use mental math to solve each equation. Check your solution.

1. \(23 + n = 30\)  
2. \(100 - n = 60\)  
3. \(30 + n = 50\)  
4. \(n - 10 = 5\) 

Solve the equation. Check your solution.

5. \(29 - n = 22\)  
6. \(n + 15 = 55\)  
7. \(60 - n = 2\)  
8. \(14 + n = 20\)

9. \(7 + n = 16\)  
10. \(42 - n = 26\)  
11. \(80 - n = 69\)  
12. \(6 + n = 32\)

13. \(46 + n = 59\)  
14. \(n - 16 = 9\)  
15. \(33 - n = 14\)

16. \(25 + n = 40\)  
17. \(16 + n = 26\)  
18. \(26 - n = 9\)

Mixed Review

19. What place value is the digit 7 in the number 43.567? ________________

20. Order the numbers 4.578; 3.67, and 3.792 from least to greatest.
Use Addition Properties

Name the addition property used in each equation.

1. \((3 + 1) + 6 = 3 + (1 + 6)\)
2. \(20 + 5 = 5 + 20\)
3. \(427 + 0 = 427\)
4. \(50 + (2 + 3) = (50 + 2) + 3\)
5. \(8 + 0 = 8\)
6. \(12 + 4 = 4 + 12\)
7. \(1.5 + (8.5 + 6) = (1.5 + 8.5) + 6\)
8. \(3,486 + 0 = 3,486\)

Find the value of \(n\). Identify the addition property used.

9. \(3 + 12 = n + 3\)
10. \(0 + n = 49\)
11. \((23 + 4) + 2 = 23 + (4 + n)\)
12. \(15.5 + (3.5 + 10) = (15.5 + n) + 10\)
13. \(58,454 + n = 58,454\)
14. \(14 + 16 = 16 + n\)

Name the addition property used in each equation.

15. \(c + o = c\)
16. \(a + b = b + a\)
17. \(x + (y + z) = (x + y) + z\)
18. \(n + r = r\)

Mixed Review

19. \(34 \times 3 \quad _____\)
20. \(45 \times 2 \quad _____\)
21. \(12 \times 2 \times 4 \quad _____\)
22. \(45 \times 4 \quad _____\)
23. \(67 \times 2 \quad _____\)
24. \(78 \times 12 \quad _____\)
Problem Solving Skill

Use a Formula

Use a formula to solve.

1. Maria’s classroom is 22 feet long and 25 feet wide. How much paper is needed to make a border around the entire classroom?

2. The perimeter of a pentagon is 94 yards. The sides measure 10 yards, 15 yards, 22 yards, 30 yards, and \(n\) yards. What is the measurement of the fifth side?

3. Find the perimeter of a triangle. The sides measure 8 feet, 6 feet, and 6 feet.

4. The school’s rectangular garden is 12 feet long and 14 feet wide. How much fence is needed to enclose the garden?

Margie walks a total of 15 miles per week. She walks a total of 6 days per week.

5. Which formula shows how many miles she walks per day?
   - A 15 \(\times\) 6 = \(n\)
   - B 15 \(\div\) 6 = \(n\)
   - C 15 + \(n\) = 6
   - D 15 − 6 = \(n\)

6. What does \(n\) equal in the problem above?
   - F 9 miles
   - G 2.5 miles
   - H 2.3 miles
   - J 90 miles

Mixed Review

7. Write an expression for this sentence: Mike had 15 potato chips and gave some away.

8. What addition property is shown: 27 + 0 = 27?

9. Round the number 3.789 to the tenths place.

10. Stacey gave four pencils to each of six friends. How many pencils did she give away to her friends?

11. Melba had four choices for snacks and three choices for drinks. How many different combinations of snacks and drinks could she have?
Write and Evaluate Expressions

Write an expression. Tell what each variable represents.

1. Zachary has 3 cases filled with CDs. Each case holds 24 CDs.

2. Janet was babysitting 3 children at the playground and 4 more came.

3. Mrs. Smith canned 20 jars of peaches each day from Monday through Friday.

4. The boys ate some cookies on Monday and 6 more on Tuesday.

5. Alicia scored 3 goals in each soccer game. There were several soccer games.

6. Bobbie had 24 pencils. He gave each of his five friends the same amount.

7. Jackie made several necklaces. She put 7 beads on each necklace.

8. The grocer put 12 cans on each shelf. There were 6 shelves.

9. Kerry had many baseball cards. He gave each of his 3 friends 8 cards.

Let \( n = 7 \). Write <, >, or = for each □.

10. \( 5 \times n □ 25 + 6 \) \hspace{2cm} 11. \( 20 \times n □ 4 \times 5 \times n \) \hspace{2cm} 12. \( n \times 6 □ 6 + n \)

13. \( n \times 8 □ (12 + n) \times 3 \) \hspace{2cm} 14. \( 3 \times n \times 2 □ 6 \times n \) \hspace{2cm} 15. \( (2 \times n) + 18 □ 4 \times 9 \)

Mixed Skills

16. \( 341,811 + 148,756 \) \hspace{2cm} 17. \( 61,507 - 28,147 \) \hspace{2cm} 18. \( 34.81 + 20.09 \)

19. \( 12.09 - 7.46 \) \hspace{2cm} 20. \( 7 \times 4 = n \) \hspace{2cm} 21. \( 12 \times 5 = n \) \hspace{2cm} 22. \( 9 \times 7 = n \)
Problem Solving Strategy

Write an Equation

Write and solve an equation for each problem. Explain what the variable represents.

1. Mary ordered 4 chicken salads to take home for dinner. Her total bill came to $24. How much was each salad?

2. Marcus ran the same number of miles every day for ten days. He ran a total of 120 miles. How many miles did Marcus run each day?

3. Steve completed some homework papers on Monday. On Tuesday he finished 6 papers, twice what he did on Monday. How many did he do on Monday?

4. Martin rode his bicycle for a total of 140 miles. It took him 7 hours. If he rode the same number of miles each hour, how many miles did he travel every hour?

Mixed Review

5. 27
   – 9
   ____

6. 43
   – 16
   ____

7. 62
   – 8
   ____

8. 91
   – 22
   ____

9. 70
   – 11
   ____

10. Two numbers have a difference of 10 and the sum of 34. What are the numbers?

11. Dallas Fort Worth Airport had 678,492 passengers this year. Fort Worth had 26,239 more passengers than O’Hare. How many passengers did O’Hare airport have?
Use Multiplication Properties

Solve the equation. Identify the property used.

1. $17 \times a = 23 \times 17$
2. $(4 \times 2) \times 5 = 4 \times (p \times 5)$
3. $n \times 1 = 240$

4. $340 \times b = 0$
5. $112 \times 13 = n \times 112$
6. $8 \times (y \times 31) = (8 \times 7) \times 31$

7. $71 \times k = 71$
8. $(z \times 14) \times 8 = 9 \times (14 \times 8)$
9. $65 \times 0 = h$

10. $28 \times 6 = 6 \times c$
11. $2 \times (7 \times r) = (2 \times 7) \times 11$
12. $t \times 79 = 79 \times 16$

Identify the property or properties shown.

13. $16 \times p = 16$
14. $(y \times p) \times t = y \times (p \times t)$
15. $r \times s = s \times r$

16. $b \times 0 = 0$
17. $(k \times l) \times d = (d \times l) \times k$

Mixed Review

18. $4.482 + 6.157$
19. $18.2546 - 8.6207$
20. $159.402 - 61,089$
21. $618,816 + 372,452$
The Distributive Property

Vocabulary

Fill in the blanks.

1. The ____________________________ ____________________________ allows you to break apart numbers to make them easy to multiply.

Use the grid below to find the product.

2. $10 \times 17 =$

3. $15 \times 14 =$

Use the Distributive Property to restate each expression. Find the product.

4. $12 \times 18$

5. $20 \times 23$

6. $30 \times 33$

Restate the expression using the Distributive Property. Then find the value of the expression.

7. $6 \times (9 + n)$ if $n$ is 30

8. $7 \times (n + 5)$ if $n$ is 50

9. $n \times (8 + 60)$ if $n$ is 3

Mixed Review

10. $7 + \Box = 4 + 32$ _____

11. $\Box + 19 = 22 + 14$ _____
Collect and Organize Data

Vocabulary

1. The _________________ is the difference between the greatest and least numbers in a set of data.

2. The _________________ is a running total of the data that has been recorded.

For 3–6, use the frequency table.

3. How many fifth graders bought a pencil in Week 1?

______________________________

in Week 4?

______________________________

4. By Week 3, how many fifth graders had bought a pencil?

______________________________

5. How many fifth graders bought pencils during the 4 weeks?

______________________________

6. What is the range of the number of fifth graders who bought a pencil each week?

______________________________

Find the range for each set of data.

7. 2, 5, 12, 7, 9

8. 63, 51, 67, 48, 56

9. 110, 121, 145, 116, 136

______________________________

Mixed Review

10. 17

11. 29

12. 44

13. 103

14. 422

× 5

× 6

× 9

× 7

× 7
Find the Mean

Vocabulary

1. The ________________ of a group of numbers can be found by adding all of the data and then dividing by the number of addends.

2. Write the steps used to find the mean of a set of data.

Find the mean for each set of data.

3. 2, 8, 3, 8, 4

4. 30, 10, 20, 10, 10

5. $5, $8, $9, $14

6. 2, 4, 4, 4, 6, 7, 8

7. 3, 8, 21, 22, 36

8. 52, 97, 101, 118

9. 115, 110, 120, 100, 100

10. 220, 180, 160, 200, 160

Use the given mean to find the missing number in each set of data.

11. 12, □, 17; mean: 14

12. 7, 8, 8, □; mean: 8

13. 1, 1, 2, 4, 5, □, 10, 10; mean: 5

14. 76, 77, 77, □, 86, 88, 91; mean: 82

Mixed Review

15. 64,578.903 + 1,722,354.3

16. $1,694,682.00 − $732,694.00

17. 727.9648 − 130.0070
Find the Median and Mode

Vocabulary

1. The ___________ is the middle number when the data is arranged in order.

2. The ___________ is the number that occurs most often in a set of data.

Find the median and the mode for each set of data.

3. Julian’s Test Scores

<table>
<thead>
<tr>
<th>Test</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>86</td>
<td>98</td>
<td>98</td>
<td>85</td>
<td>87</td>
<td>92</td>
<td>89</td>
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</table>

4. Students’ Heights

<table>
<thead>
<tr>
<th>Name</th>
<th>Rose</th>
<th>Sally</th>
<th>Hank</th>
<th>John</th>
<th>Raj</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches</td>
<td>57</td>
<td>53</td>
<td>55</td>
<td>56</td>
<td>57</td>
</tr>
</tbody>
</table>

5. Baseball Cards

<table>
<thead>
<tr>
<th>Name</th>
<th>Sam</th>
<th>Jen</th>
<th>Tad</th>
<th>Phil</th>
<th>Li</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>300</td>
<td>280</td>
<td>320</td>
<td>280</td>
<td>340</td>
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</table>

6. Magazines Sold

<table>
<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
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<td>150</td>
<td>175</td>
<td>160</td>
<td>225</td>
<td>190</td>
<td>225</td>
</tr>
</tbody>
</table>

Mixed Review

7. \[4 \div 2636\]
8. \[8 \div 7978.56\]
9. \[4.9 \div 1102.5\]
10. \[8 \div 762.16\]

11. 27 31 19 112
12. 34 99 26 29
13. 18 19 17 27
14. 58 20 30 44
15. 82 69 49 123
Problem-Solving Strategy
Make a Graph

Vocabulary

1. A _______________ organizes data by place value.

Make a graph to solve.

2. During science class the students recorded the height of their plants in centimeters. The heights were: 10, 12, 12, 13, 15, 18, 20, 21, 24, 36, 36, 38, 40. Do the plants usually grow in the 10's, 20's, 30's, or 40's?

3. What is the range of the data? 4. What is the median? 5. What is the mode?

6. Mrs. Hill's class is doing a project about their grandparents' lives. Part of the project is to record the ages of their grandparents. The students list the following ages: 51, 53, 55, 55, 60, 61, 63, 67, 73, 75, 80. What is the mean of their grandparents' ages?

7. What is the range of the data? 8. What is the median? 9. What is the mode?

Mixed Review

Find the mean.

10. 22, 23, 59, 61, 65 ________ 11. 88.5, 88.7, 89, 91.2, 91.9 ________
Analyze Graphs

For 1–3, use the bar graph.

1. Mark’s class recorded their favorite fruits in a bar graph. Which type of fruit is more popular? How many students chose that fruit?

2. How many more students chose apples than pears?

3. How many students recorded their favorite fruits?

For 4–6, use the circle graph.

4. Steve made a circle graph to display his weekly expenses. What does Steve spend the least amount of money on each week? The most amount of money on?

5. On what two items does Steve spend about the same amount each week?

6. How much does Steve spend in a week on comic books and baseball cards?

Mixed Review

Solve.

7. 14 + n = 56

8. 27 − n = 1

Write in standard form.

9. seven and seven hundred twelve thousandths

10. forty–one and three hundred eighty–seven ten–thousandths
Choose a Reasonable Scale

Vocabulary

Write the vocabulary word that best describes the part of a graph.

1. a series of numbers placed at fixed distances ______________________
2. the distance between each number on the scale ______________________

Choose a, b, c, or d as the most reasonable interval for the data.

3. 25, 50, 70, 75, 100 4. 2, 4, 1, 7, 5  a. 25
   ____  ____  b. 5
5. 5, 10, 30, 40, 20 6. 15, 25, 35, 20, 40  c. 10
   ____  ____  d. 1

Circle the letter of the more reasonable scale for the data.

7.

<table>
<thead>
<tr>
<th>Favorite Color</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>40</td>
</tr>
<tr>
<td>Blue</td>
<td>50</td>
</tr>
<tr>
<td>Green</td>
<td>20</td>
</tr>
<tr>
<td>Yellow</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
</tbody>
</table>

8.

<table>
<thead>
<tr>
<th>Week</th>
<th>Number Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

a. 25  b. 80
20  60
15  40
10  20
5  0
0

Mixed Review

For 9–10, use the table.

9. What is a reasonable scale for the data?

10. How many students were surveyed?

<table>
<thead>
<tr>
<th>Favorite Snack</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oatmeal cookies</td>
<td>18</td>
</tr>
<tr>
<td>Sandwich</td>
<td>20</td>
</tr>
<tr>
<td>Fruit</td>
<td>10</td>
</tr>
</tbody>
</table>
**Problem Solving Strategy**

**Make a Graph**

Make a graph to solve.

1. **New Mascot**

<table>
<thead>
<tr>
<th>Mascot</th>
<th>Wolf</th>
<th>Bear</th>
<th>Lion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>160</td>
<td>140</td>
<td>100</td>
</tr>
</tbody>
</table>

Mr. Brown, the principal, surveyed students to find out which mascot they wanted. He organized the data in a table. What graph should he use to display the data? What is a reasonable interval? scale? Make the graph.

2. **Homework Pages Assigned**

<table>
<thead>
<tr>
<th>Month</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Pages</td>
<td>40</td>
<td>60</td>
<td>80</td>
<td>40</td>
<td>80</td>
</tr>
</tbody>
</table>

Mr. Flores kept track of the number of homework pages assigned to the class for 5 months. He recorded the data in a table. What graph or plot should he use to display the data? What is a reasonable interval? scale? Make the graph.

**Mixed Review**

3. Ben sold newspaper subscriptions. He sold 20 subscriptions on Monday and Tuesday, 15 subscriptions on Wednesday and Thursday, and 30 subscriptions on Friday. What is the mean number of subscriptions Ben sold?

4. Samantha saved $35.50 to buy new clothes. She bought a shirt for $15.80 and a pair of pants for $12.75. How many pairs of socks priced at $1.99 a pair can she buy?

5. The mean, median, and mode of 8, 5, 9, 6, 7, and □ are the same. What number is missing?

6. Tracey has 4 coins in her pocket. If she has $0.46 in her pocket, what coins does she have?

7. \(49 \times 6\)

8. \(72 \times 2\)

9. \(34 \times 8\)

10. \(81 \times 9\)

11. \(57 \times 8\)
Graph Ordered Pairs

Name the ordered pair for each point.

1. E _____ 2. H _____
5. A _____ 6. D _____
7. N _____ 8. I _____
9. W _____ 10. L _____

Graph and label the following points on a coordinate grid.

15. S (4, 6) 16. A (0, 5) 17. V (3, 7) 18. G (4, 1)
19. E (5, 0) 20. H (1, 7) 21. T (2, 6) 22. Y (1, 0)

Use the map for 23–25.

23. Going from the school to the City Hall, in what direction would you go? (6, 1)

24. If each square represents one block, how many blocks is the Post Office from the Theater?

25. Give directions to go from the School to the Post Office.

Mixed Review

26. Round 4,568,299 to the nearest 10,000. 27. 738,492
   586,238

28. What is the value of the underlined digit? 34,794,210
Make Line Graphs

Vocabulary

Complete.

1. The _______________ is the difference between the greatest and least numbers in a set of data.

Make a line graph for the data.

2.  

<table>
<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Books</td>
<td>15</td>
<td>10</td>
<td>20</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>

3.  

<table>
<thead>
<tr>
<th>Month</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inches</td>
<td>4</td>
<td>12</td>
<td>8</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

Mixed Review

For 4–5, use the table.

<table>
<thead>
<tr>
<th>Day</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>10 min</td>
<td>20 min</td>
<td>30 min</td>
<td>20 min</td>
<td>15 min</td>
</tr>
</tbody>
</table>

4. What would be a reasonable scale for a line graph displaying these data?

5. What are the mean, median, and mode for the time Sheila spent playing the piano?
Histograms

Decide which graph would best represent the data below, a bar graph or histogram. Then make each graph.

1. | Points scored | Number of Players |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>21–25</td>
<td>13</td>
</tr>
<tr>
<td>26–30</td>
<td>16</td>
</tr>
<tr>
<td>31–35</td>
<td>12</td>
</tr>
<tr>
<td>36–40</td>
<td>8</td>
</tr>
</tbody>
</table>

2. | Favorite Month | Number of students |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>December</td>
<td>42</td>
</tr>
<tr>
<td>June</td>
<td>38</td>
</tr>
<tr>
<td>August</td>
<td>29</td>
</tr>
<tr>
<td>July</td>
<td>31</td>
</tr>
</tbody>
</table>

3. | Grade   | Number of students |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>104</td>
</tr>
<tr>
<td>Second</td>
<td>135</td>
</tr>
<tr>
<td>Third</td>
<td>124</td>
</tr>
<tr>
<td>Fourth</td>
<td>144</td>
</tr>
<tr>
<td>Fifth</td>
<td>122</td>
</tr>
</tbody>
</table>

4. | Heart Rate | Number of students |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>55–58</td>
<td>4</td>
</tr>
<tr>
<td>58–61</td>
<td>12</td>
</tr>
<tr>
<td>62–65</td>
<td>14</td>
</tr>
<tr>
<td>66–69</td>
<td>18</td>
</tr>
<tr>
<td>70–73</td>
<td>25</td>
</tr>
</tbody>
</table>

5. Give 4 intervals that you could use to make a histogram for this data.

Mixed Review

6. $80,000 \times 6 = \underline{\text{ }}$

7. What is the value of the underlined digit?
   249.563

8. Write an equation to show the Property of One in multiplication?
Choose the Appropriate Graph

For 1–4, choose the best type of graph or plot for the data. Explain your choice.

1. monthly high temperatures for a city over a 6-month period
2. heights of students in a class
3. most popular athletic shoe brand in a class
4. money spent on food each week over a 5-week period

Draw the graph or plot that best displays each set of data.

5. **Money Earned For Trip**

<table>
<thead>
<tr>
<th>Week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount</td>
<td>$50</td>
<td>$40</td>
<td>$60</td>
<td>$80</td>
<td>$90</td>
</tr>
</tbody>
</table>

6. **Favorite TV Network**

<table>
<thead>
<tr>
<th></th>
<th>ABZ</th>
<th>CAT</th>
<th>DOG</th>
<th>ROX</th>
<th>CAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sixth Graders</td>
<td>5</td>
<td>10</td>
<td>20</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Third Graders</td>
<td>20</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>5</td>
</tr>
</tbody>
</table>

Mixed Review

For 7–8, use the table.

7. What type of graph would you use to display the data? Explain.

8. What is the number of pets most students own?

9. $493,487 + 231,147 = 724,634$

10. $946,493 - 128,518 = 817,975$
Estimation: Patterns in Multiples

Estimate each product.

1. $5 \times 2,346$  
   
2. $7 \times 8,943$  
   
3. $54 \times 237$  
   
4. $66 \times 2,159$  
   
5. $32 \times 4,742$  
   
6. $89 \times 3,456$  
   
7. $54 \times 4,576$  
   
8. $76 \times 543$  
   
9. $54 \times 893$  
   
10. $67 \times 238$  
    
11. $98 \times 308$  
    
12. $76 \times 3,480$  
    
13. $765 \times 78$  
    
14. $432 \times 89$  
    
15. $567 \times 23$  
    

Mixed Review

16. $78,322 - 66,328$  
   
17. $98,754 + 54,672$  
   
18. $309 \times 23$  
   
19. $715 \times 16$  
   

20. Write in word form: 23,571

21. Write in expanded form: 4,321

22. Round 26.9865 to the nearest thousandth. ____________

23. Round 795.8716 to the nearest hundredth. ____________
Multiply by 1–Digit Numbers

Find each product. Estimate to check.

1. \(7,618 \times 8\)
2. \(9,853 \times 6\)
3. \(43,702 \times 5\)

Write <, >, or = in each circle.

4. \(567,899 \times 4\) ___ \(34,999 \times 9\)
5. \(44,333 \times 6\) ___ \(88,321 \times 3\)
6. \(63,809 \times 2\) ___ \(54,902 \times 8\)
7. \(56,790 \times 2\) ___ \(28,395 \times 4\)

For 8–9, use the table.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>$5.95</td>
</tr>
<tr>
<td>Bat</td>
<td>$7.90</td>
</tr>
<tr>
<td>Hat</td>
<td>$9.20</td>
</tr>
<tr>
<td>Glove</td>
<td>$15.60</td>
</tr>
</tbody>
</table>

8. Max purchased 3 baseballs. How much did he spend?

9. Jake purchased 2 gloves and a hat. How much did he spend?

10. How much will Mr. Carrington spend to buy one of each item?

11. The team gave a glove to each of its 9 players. How much did it cost to provide the gloves?

Mixed Review

12. Solve the equation: \(n + 7 + 15\) ________

13. Evaluate \(n + 7 - (2 \times 6)\) when \(n = 5\). ________

14. Find the median of 44, 47, 49, 54, 67; ________

15. Find the mode of 54, 67, 82, 54, 90; ________

16. Find the mean of 34, 25, 68, 45 ________

PW42 Practice
Multiply by 2–Digit Numbers

Find each product. Estimate to check.

1. $24 \times 46$
2. $16 \times 37$
3. $43 \times 54$
4. $74 \times 47$

5. $246 \times 22$
6. $137 \times 65$
7. $758 \times 14$
8. $420 \times 31$

9. $2,474 \times 16$
10. $3,245 \times 25$
11. $4,080 \times 35$
12. $1,625 \times 30$

Write $<, >$, or $=$ in each $\bigcirc$.

13. $13 \times 28 \bigcirc 25 \times 14$
14. $24 \times 12 \bigcirc 16 \times 18$
15. $123 \times 15 \bigcirc 124 \times 16$
16. $33 \times 45 \bigcirc 45 \times 33$
17. $231 \times 21 \bigcirc 213 \times 31$
18. $2,002 \times 34 \bigcirc 2,020 \times 23$

Mixed Review

19. Seth, Brian, and Mark are comparing their heights. At 52 inches, Seth is 6 inches taller than Brian. Brian is 3 inches shorter than Mark. How tall is Mark?

20. Write five hundred two and three hundred nine thousandths in standard form.

21. $38 \times 6$
22. $72 \times 5$
23. $66 \times 9$
24. $23 \times 3$
25. $42 \times 8$
Multiply Greater Numbers

Find the product. Estimate to check.

1. $408 \times 562 =$
2. $329 \times 1,123 =$
3. $2,147 \times 415 =$

4. $336 \times 483 =$
5. $212 \times 3,678 =$
6. $4,552 \times 53 =$

7. $1,216 \times 15$
8. $1,714 \times 49$
9. $2,431 \times 76$

10. $3,239 \times 64$
11. $4,256 \times 39$
12. $6,274 \times 95$

13. $1,495 \times 627$
14. $2,501 \times 251$
15. $6,328 \times 346$

Mixed Review

Find the value of $n$.

16. $(36 \div n) \times 20 = 120$
17. $22 + (n - 4) = 79$

18. $38 + n + 68.5 = 149.80$
19. $12.42 \div (17 - n) = 4.14$

20. Sophia ran the 100-meter dash in 11.36 seconds. What is the value of the 3 in her time?
21. Estimate and find the exact answer.

$78,932 - 65,345$
Problem Solving Skill

Evaluate Answers for Reasonableness

Write the most reasonable answer without solving.

1. Walter prints 234,897 magazines per day in his factory. He says he prints more than 6,000,000 magazines a month. Is his answer reasonable? Explain.

2. The car dealer in town purchased 478 cars, each one costing $19,453. He said he paid $929,534 for the cars. Is his answer reasonable?

Choose the most reasonable answer without solving.

3. Eddie saves $5 per week for a bike. After three years approximately how much did he save?

A  $15  
B  $25  
C  $500  
D  $750

4. A mayor received about 334,000 votes from each of 3 different areas. About how many votes did he receive?

F  100,000 votes  
G  111,000 votes  
H  1,000,000 votes  
J  1,110,000 votes

Mixed Review

Use data from the graph to answer 5–7.

5. What was the approximate difference in numbers of male and female athletes during 1987?

6. What was the approximate difference in numbers of male and female athletes during 1988?

7. What was the approximate total number of athletes during 1989?
Multiply Decimals and Whole Numbers

Make a model to find each product.

1. \(2 \times 0.5 = n\)  
2. \(3 \times 0.4 = n\)  
3. \(2 \times 0.25 = n\)  
4. \(0.17 \times 3 = n\)

\[\_\_\_\_\_\_\_\_\_\_\_\_\]

5. \(4 \times 0.7 = n\)  
6. \(0.11 \times 4 = n\)  
7. \(3 \times 0.8 = n\)  
8. \(0.33 \times 2 = n\)

\[\_\_\_\_\_\_\_\_\_\_\_\_\]

Phillip is buying school supplies at the student book store. For 9–13, use the pictures to find the total cost.

9. 2 pencils, 2 erasers

\[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

10. 2 markers, 1 protractor

\[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

11. 3 pencils, 2 compasses

\[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

12. 4 markers, 2 erasers, 1 protractor

\[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

13. 3 compasses, 2 markers, 1 pencil

\[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

Mixed Review

14. Phyllis is shopping at the student book store. Which costs more—2 markers, or 1 compass and 2 pencils?

\[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

15. Sam has $0.36. He has 5 coins. What are they?

\[\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\]

16. \(335,657\)  
17. \(7,612\)

\[\times 8 \quad \times 15\]

18. \(101,483\)  
19. \(492,655\)

\[\times 50 \quad \times 17\]
Algebra: Patterns in Decimal Factors and Products

Use mental math to complete.

1. $1 \times 0.007 = 0.007$
   $10 \times 0.007 = 0.07$
   $100 \times 0.007 = 0.7$
   $1,000 \times 0.007 = 7$

2. $1 \times 0.034 = 0.034$
   $10 \times 0.034 = 0.34$
   $100 \times 0.034 = 3.4$
   $1,000 \times 0.034 = 34$

3. $1 \times 0.0061 = 0.0061$
   $10 \times 0.0061 = 0.061$
   $100 \times 0.0061 = 0.61$
   $1,000 \times 0.0061 = 6.1$

---

4. $1 \times 0.53 = 0.53$
   $10 \times 0.53 = 5.3$
   $100 \times 0.53 = 53$
   $1,000 \times 0.53 = 530$

5. $1 \times 0.0817 = 0.0817$
   $10 \times 0.0817 = 0.817$
   $100 \times 0.0817 = 8.17$
   $1,000 \times 0.0817 = 81.7$

6. $1 \times 0.49 = 0.49$
   $10 \times 0.49 = 4.9$
   $100 \times 0.49 = 49$
   $1,000 \times 0.49 = 490$

---

Multiply each number by 10, by 100, and by 1,000.

7. $0.4$
   $10 \times 0.4 = 4$
   $100 \times 0.4 = 40$
   $1,000 \times 0.4 = 400$

8. $0.16$
   $10 \times 0.16 = 1.6$
   $100 \times 0.16 = 16$
   $1,000 \times 0.16 = 160$

9. $0.7832$
   $10 \times 0.7832 = 7.832$
   $100 \times 0.7832 = 78.32$
   $1,000 \times 0.7832 = 783.2$

10. $0.17$
    $10 \times 0.17 = 1.7$
    $100 \times 0.17 = 17$
    $1,000 \times 0.17 = 170$

11. $1.19$
    $10 \times 1.19 = 11.9$
    $100 \times 1.19 = 119$
    $1,000 \times 1.19 = 1190$

12. $5.9173$
    $10 \times 5.9173 = 59.173$
    $100 \times 5.9173 = 591.73$
    $1,000 \times 5.9173 = 5917.3$

---

Find the value of $n$.

13. $10 \times 0.7 = n$
    $100 \times 0.7 = n$
    $1,000 \times 0.7 = n$

14. $100 \times 0.625 = n$
    $1,000 \times 0.625 = n$

15. $n \times 100 = 0.7$
    $10 \times n = 0.7$
    $100 \times n = 0.7$

16. $1,000 \times 0.23 = n$
    $100 \times 0.23 = n$
    $10 \times 0.23 = n$

17. $100 \times 0.5 = n$
    $1,000 \times 0.5 = n$

18. $10 \times n = 50.3$
    $100 \times n = 503$
    $1,000 \times n = 5030$

---

Mixed Review

19. What is the place value of the digit 6 in the number 162,083?

20. Which digits make $11. \square 57 < 11.407$ true?
Model Decimal Multiplication

Complete the multiplication sentence for each model.

1. \(0.3 \times 0.4 = n\)
2. \(n \times 0.7 = 0.28\)
3. \(n \times 0.8 = 0.16\)
4. \(0.7 \times n = 0.42\)

Make a model to find the product.

5. \(0.4 \times 0.7\)
6. \(0.1 \times 0.5\)
7. \(0.8 \times 0.3\)
8. \(0.6 \times 0.9\)

Find the product.

9. \(0.7 \times 0.6\)
10. \(0.4 \times 0.9\)
11. \(0.9 \times 0.3\)
12. \(0.8 \times 0.6\)
13. \(0.2 \times 0.5\)
14. \(0.5 \times 0.3\)
15. \(0.8 \times 0.5\)
16. \(0.1 \times 0.9\)
17. \(0.4 \times 0.4\)
18. \(0.7 \times 0.5\)
19. \(0.2 \times 0.6\)
20. \(0.6 \times 0.6\)
21. \(0.5 \times 0.4\)
22. \(0.8 \times 0.7\)
23. \(0.9 \times 0.5\)
24. \(0.6 \times 0.3\)
25. \(0.4 \times 0.2\)
26. \(0.7 \times 0.7\)

Find the value of \(n\).

27. \(n \times 0.3 = 0.15\)
28. \(0.7 \times n = 0.56\)
29. \(n \times 0.6 = 0.36\)
30. \(0.9 \times n = 0.36\)

Mixed Review

31. \(3.6 + 4.3\)
32. \(7.6 + 0.75\)
33. \(16.3 + 0.07\)
34. \(6.3 + 1.48\)
Place the Decimal Point

Choose the best estimate. Write \(a\), \(b\), or \(c\).

1. \(11 \times 0.3\)
   \(a\). 3  \(b\). 30  \(c\). 300

2. \(24 \times 0.6\)
   \(a\). 1.2  \(b\). 12  \(c\). 120

3. \(42 \times 0.9\)
   \(a\). 4  \(b\). 40  \(c\). 400

4. \(36 \times 0.4\)
   \(a\). 0.9  \(b\). 6  \(c\). 15

5. \$0.83 \times 2
   \(a\). $1.60  \(b\). $16.00  \(c\). $160.00

Find the product. Estimate to check.

7. \(0.5 \times 28\)

8. \(2.6 \times 3.9\)

9. \(0.72 \times 317\)

10. \(5.64 \times 9.7\)

Find the product.

11. \(0.2 \times 0.6\)

12. \(1.2 \times 0.7\)

13. \(0.83 \times 0.29\)

14. \(9.1 \times 3.7\)

Copy the answer. Place the decimal point in the product.

15. \(7.2 \times 4\)
    \[
    \begin{array}{c}
    7.2 \\
    \times 4 \\
    \hline
    288
    \end{array}
    \]

16. \(0.58 \times 7\)
    \[
    \begin{array}{c}
    0.58 \\
    \times 7 \\
    \hline
    406
    \end{array}
    \]

17. \(4.218 \times 0.31\)
    \[
    \begin{array}{c}
    4.218 \\
    \times 0.31 \\
    \hline
    1.30758
    \end{array}
    \]

18. \(2.723 \times 8.149\)
    \[
    \begin{array}{c}
    2.723 \\
    \times 8.149 \\
    \hline
    22.189727
    \end{array}
    \]

Mixed Review

19. What is the range of the data 12, 33, 19, 79, 44, 48?

20. Evaluate \((n \times 6) \times 4\) when \(n = 2\).

21. Write five ten thousandths as a decimal.
Zeros in the Product

Find the product.

1. \(2 \times 0.04\)  
2. \(9 \times 0.007\)  
3. \(0.6 \times 0.07\)  
4. \(43.1 \times 0.03\)

\[
\begin{align*}
\text{5. } & \ 0.008 \times 7 \\
\text{6. } & \ 0.07 \times 7 \\
\text{7. } & \ 0.004 \times 13.7 \\
\text{8. } & \ 0.065 \times 0.9
\end{align*}
\]

9. \(93.27 \times 0.03\)  
10. \(0.0042 \times 78\)  
11. \(0.0061 \times 0.5\)  
12. \(0.008 \times 0.05\)

Find the product. Round to the nearest cent.

13. \$0.34 \times 0.09\)  
14. \$7.18 \times 0.03\)  
15. \$0.92 \times 0.08\)  
16. \$73.62 \times 0.06\)

\[
\begin{align*}
\text{13. } & \ \frac{1}{2} \\
\text{14. } & \ \frac{1}{2} \\
\text{15. } & \ \frac{1}{2} \\
\text{16. } & \ \frac{1}{2}
\end{align*}
\]

Write <, >, or = for each \(\square\).

17. \(0.03 \times 0.09 \square 0.3 \times 0.009\)  
18. \(0.07 \times 0.4 \square 0.007 \times 0.4\)

19. \(0.45 \times 0.01 \square 0.005 \times 0.91\)  
20. \(0.076 \times 0.8 \square 0.08 \times 0.76\)

Mixed Review

21. \(13,788 + 43,791\)  
22. \(77.028 + 12.937\)  
23. \(150.257 - 73.084 + 337,944\)  
24. \(563,072\)

25. \(5,073 + 312\)  
26. \$194.20 + $31.57\)  
27. \(91.836 - 12.900 + $87.02\)  
28. \$421.99
Problem Solving Skill:
Make Decisions

For 1–4, use the information in the table.

<table>
<thead>
<tr>
<th>Item</th>
<th>Store A</th>
<th>Store B</th>
<th>Store C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheese</td>
<td>$0.49</td>
<td>$0.33</td>
<td>$0.59</td>
</tr>
<tr>
<td>Peppers</td>
<td>$0.99</td>
<td>$1.05</td>
<td>$1.09</td>
</tr>
<tr>
<td>Sausage</td>
<td>$2.59</td>
<td>$2.10</td>
<td>$1.99</td>
</tr>
<tr>
<td>Pepperoni</td>
<td>$2.69</td>
<td>$2.30</td>
<td>$2.90</td>
</tr>
</tbody>
</table>

You are planning to make a pizza. You want one of each of the items in the table above.

1. If you could only go to one store to buy all of the items, to which store would you go? Why?
2. If you could go to more than one store, what is the least you could spend?

3. If you could only go to stores A and B or stores B and C, what is the least you could spend? What stores would you go to?

4. It costs $1.23 to drive to store A, $2.44 to drive to store B, and $1.30 to drive to store C. You can only go to one store. To which store would you go now? What is the total cost?

Mixed Review

Multiply each number by 10, by 100, and by 1,000.

5. 0.6
6. 7.2
7. 0.0012
8. 0.043

Find the value of \( n \).

9. \( 1,024 - 718 = n \)
10. \( 100 \times 0.4 = n \)
11. \( n \times 1,000 = 0.6 \)
Estimate Quotients

Vocabulary

Fill in the blanks.

1. __________________________ are numbers close to the actual numbers that can be divided evenly.

Estimate the quotient. Tell what compatible numbers you used.

2. \(817 \div 4\)
3. \(462 \div 9\)
4. \(703 \div 7\)
5. \(492 \div 8\)

Estimate the quotient using two sets of compatible numbers.

6. \(281 \div 3\)
7. \(5,391 \div 6\)
8. \(29,537 \div 3\)
9. \(293,765 \div 5\)

Mixed Review

18. \(25,294 \times 38\)
19. \(193,867 \times 45\)
20. \(3.67 \times 0.05\)
21. \(9.28 \times 0.14\)
22. \(72,014 + 36,958\)

23. \(7 \sqrt{69}\)
24. \(4 \sqrt{83}\)
25. \(5 \sqrt{73}\)
26. \(8 \sqrt{36}\)
27. \(4 \sqrt{95}\)
Divide 3-Digit Dividends

Name the position of the first digit of the quotient.

1. \(4 \overline{)832}\)  
2. \(2 \overline{)417}\)  
3. \(7 \overline{)217}\)  
4. \(6 \overline{)213}\)

Divide.

5. \(9 \overline{)326}\)  
6. \(3 \overline{)235}\)  
7. \(6 \overline{)367}\)  
8. \(4 \overline{)935}\)

9. \(6 \overline{)115}\)  
10. \(9 \overline{)504}\)  
11. \(7 \overline{)219}\)  
12. \(5 \overline{)621}\)

Find the value of \(n\).

13. \(517 \div 2 = n\)  
14. \(n \div 3 = 203\)  
15. \(785 \div n = 112 \text{ r} 1\)  
16. \(431 \div 6 = n\)

17. On Friday and Saturday, 618 people attended a car show. If the same number of people went each day, how many people attended the car show on Saturday?

18. Sue drove 364 miles in 7 hours. How many miles did she drive in 1 hour?

Mixed Review

19. \(5,862 + 6,374\)  
20. \(93,042 - 54,878\)  
21. \(29,038 \times 72\)  
22. \(153,911 - 68,099\)  
23. \(330,146 \times 28\)

24. \(49,499 \times 5\)  
25. \(61,711 - 30,490\)  
26. \(9,715 + 2,243\)  
27. \(22,675 \times 30\)  
28. \(2,381 - 695\)
Zeros in Division
Divide. Estimate to check.

1. 8)330  
2. 6)371  
3. 2)813  
4. 9)625  

5. 5)535  
6. 3)924  
7. 4)836  
8. 6)615  

9. 2)610  
10. 9)960  
11. 7)423  
12. 8)647  

Find the value of \( n \).

13. \( 902 \div 9 = n \)  
14. \( n \div 2 = 204 \) \( r1 \)  
15. \( 142 \div n = 28 \) \( r2 \)  
16. \( 821 \div 8 = n \)

17. On Saturday and Sunday, a total of 908 people attended the museum. If the same number of people came each day, how many went to the museum on Sunday?

18. During a 5-hour period, 510 lunches were sold in a cafeteria. If the same number of lunches were sold each hour, how many lunches were sold during the first hour?

Mixed Review

19. \( 1.75 + 4.93 \)  
20. \( 2.34 \times 0.31 \)  
21. \( 48 \times 84 \)  
22. \( 2,476,935 + 3,983,566 \)  
23. \( 72 \times 27 \)  

24. \( 6,505 \times 2 \)  
25. \( 4.28 - 3.79 \)  
26. \( 52 \times 80 \)  
27. \( 6,721,400 - 4,055,981 \)  
28. \( 33 \times 56 \)

PW54 Practice
Divide Greater Numbers

Divide.

1. $5 \overline{) 5,379}$  
   2. $7 \overline{) 3,942}$  
   3. $4 \overline{) 8,632}$  
   4. $4 \overline{) 2,434}$

5. $7 \overline{) 6,015}$  
   6. $2 \overline{) 19,673}$  
   7. $8 \overline{) 34,763}$  
   8. $9 \overline{) 52,845}$

9. $48,592 \div 8$  
10. $78,787 \div 3$  
11. $81,438 \div 6$  
12. $99,228 \div 9$

13. $45,980 \div 2$  
14. $299,344 \div 7$  
15. $752,638 \div 8$  
16. $430,572 \div 2$

Mixed Review

17. Write the place value of the **bold-faced** digit: 4,532,703,689
18. Write the standard form for one billion, thirty-four million, five hundred thousand, nine hundred eighty-two.
19. Order from greatest to least: 63,545; 63,454; 64,455; 64,544.

20. $97,036 - 53,987$  
21. $635,837 + 283,496$  
22. $853,969 \times 17$  
23. $38.72 - 17.09$
Algebra: Expressions and Equations

Evaluate the expression $2,460 \div n$ for each value of $n$.

1. $n = 6$  
2. $n = 3$  
3. $n = 2$  
4. $n = 5$

Evaluate the expression for each value of $n$.

5. $n \div 6$  
   $n = 54, 96, 138$  

6. $216 \div n$  
   $n = 3, 4, 9$

7. $n \div 8$  
   $n = 64, 256, 328$

8. $4,832 \div n$  
   $n = 2, 4, 8$

Determine which value is a solution for the given equation.

9. $54 \div n = 6$  
   $n = 3, 6$ or 9  

10. $136 \div n = 34$  
    $n = 6, 2$ or 4  

11. $n \div 5 = 42$  
    $n = 200$ or 210

12. $265 \div n = 5$  
    $n = 51$ or 53

Solve the equation. Then check the solution.

13. $45 \div n = 9$  

14. $32 \div n = 4$  

15. $48 \div n = 12$  

16. $n \div 8 = 9$

Mixed Review

17. $23.74 + 0.25$  
18. $23.74 \times 0.25$  
19. $2.48 \times 0.77$  
20. $39.60 \div 25.72$  
21. $59.61 \times 0.15$
Problem Solving Skill

Interpret the Remainder

Solve and then explain how you interpreted the remainder.

1. A total of 134 players signed up for a soccer league. The league has 9 teams. How many players will be on most of the teams?

2. There are 230 books in the store-room. The books are stored in 7 boxes. How many books are in most of the boxes?

3. Lauren’s piece of wire is 5 times longer than Larry’s wire. Lauren’s wire is 8 cm long. How long is Larry’s wire?

4. Lee’s Bakery sells muffins by the dozen. The bakery has 230 muffins prepared. Does the bakery have enough muffins to fill 20 orders?

5. Sue has 85 flowers. She put them in 7 vases with the same number of flowers in each vase except one. How many flowers are in the vase with the greatest number of flowers?

6. Jeremy had 75 feet of string. He divided it into 4 equal pieces. How long was each piece of string?

Mixed Review

7. 5,232 \[\begin{array}{c}
     \hline
     - 2,989
     \end{array}\]

8. 9.71 \[\begin{array}{c}
     \hline
     \times 0.36
     \end{array}\]

9. 7.043 \[\begin{array}{c}
     \hline
     \times 0.620
     \end{array}\]

10. 455 \[\begin{array}{c}
     \hline
     \times 23
     \end{array}\]

11. 7.790 \[\begin{array}{c}
     \hline
     \times 0.431
     \end{array}\]

12. 121 \div 11 = \underline{\phantom{0000}}

13. 96 \div 12 = \underline{\phantom{0000}}

14. 108 \div 12 = \underline{\phantom{0000}}
Algebra: Patterns in Division

Use mental math to complete. Write the basic fact you use.

1. \(100 \div 2 = \) 2. \(900 \div 90 = 10\) 3. \(300 \div 50 = 6\)
   - \(1,000 \div 2 = 500\)  - \(9,000 \div 90 = \)  - \(3,000 \div 50 = 60\)
   - \(10,000 \div 2 = 5,000\)  - \(90,000 \div 90 = 1,000\)  - \(30,000 \div 50 = \)

4. \(140 \div 20 = 7\) 5. \(250 \div 50 = \) 6. \(360 \div 60 = 6\)
   - \(1,400 \div 20 = \)  - \(2,500 \div 50 = 50\)  - \(3,600 \div 60 = 60\)
   - \(14,000 \div 20 = 700\)  - \(25,000 \div 50 = 500\)  - \(36,000 \div 60 = \)

Use basic facts and patterns to solve for \(n\).

7. \(120 \div 4 = n\) 8. \(320 \div 80 = n\) 9. \(810 \div 90 = n\) 10. \(350 \div 70 = n\)

11. \(480 \div 60 = n\) 12. \(720 \div n = 9\) 13. \(4,000 \div 80 = n\) 14. \(2,000 \div n = 100\)

15. \(5,400 \div n = 90\) 16. \(3,600 \div n = 90\) 17. \(5,600 \div n = 800\) 18. \(2,700 \div n = 30\)

Compare. Use <, >, or = in each circle.

19. \(24,000 \div 80\) 20. \(1,200 \div 3\) 21. \(54,000 \div 600\) 22. \(14,000 \div 70\)

Mixed Review

23. \(758,204 + 675,938 = 1,434,142\) 24. \(19.654 - 3.789 = 15.865\) 25. \(20.03 \times 0.56 = 11.2188\) 26. \(672 \div 9 = \)
Estimate Quotients

Write two pairs of compatible numbers for each. Give two possible estimates.

1. \(359 \div 55 = n\)  
   
   \[
   \underline{300} \quad \underline{60}
   \]

2. \(715 \div 74 = n\)  
   
   \[
   \underline{700} \quad \underline{100}
   \]

3. \(156 \div 37 = n\)  
   
   \[
   \underline{140} \quad \underline{20}
   \]

4. \(438 \div 57 = n\)  
   
   \[
   \underline{400} \quad \underline{100}
   \]

5. \(1,893 \div 52 = n\)  
   
   \[
   \underline{1800} \quad \underline{300}
   \]

6. \(3,127 \div 44 = n\)  
   
   \[
   \underline{3000} \quad \underline{500}
   \]

Estimate the quotient.

7. \(18)175\)  
   
   estimate: 35

8. \(37)231\)  
   
   estimate: 120

9. \(62)375\)  
   
   estimate: 40

10. \(81)255\)  

11. \(53)2,681\)  

12. \(41)3,289\)  

13. \(79)4,007\)  

14. \(29)1,811\)

15. \(34)241\)  

16. \(53)4,787\)  

17. \(47)388\)  

18. \(68)3,594\)  

Name the compatible numbers used to find the estimate.

19. \(725 \div 19\)  
   
   estimate: 35

20. \(3,641 \div 34\)  
   
   estimate: 120

21. \(2,913 \div 72\)  
   
   estimate: 40

22. \(439 \div 44\)  
   
   estimate: 10

Mixed Review

13. \(345 \times 89\)  
   
   \[
   \underline{300} \quad \underline{200}
   \]

24. \(4,578,459 + 7,612,501\)  
   
   \[
   \underline{12,191,960}
   \]

25. \(54,607 - 23,999\)  
   
   \[
   \underline{30,608}
   \]

26. \(10)4,000\)  

27. \(366,546 + 601,593\)  

28. \(614,760 - 407,345\)  

29. \(908 \times 57\)  

30. \(10)9,650\)
Divide by 2-Digit Divisors

Name the position of the first digit of the quotient.

1. 17)1,527  
2. 23)1,941  
3. 34)7,109  
4. 45)5,683  
   1  
   1 3 5 2 6 8 3  
   1 3 5 2 6 8 3  
   2 2  
   1 3 5 2 6 8 3  
   1 3 5 2 6 8 3  
5. 89)9,266  
6. 31)6,683  
7. 24)1,742  
8. 87)9,556  
   1  
   1  
   1 9 4  
   1 9 4  
   2  
   1 9 4  
   1 9 4  

Divide. Check by multiplying.

9. 433 ÷ 35  
10. 698 ÷ 22  
11. 582 ÷ 41  
12. 3,121 ÷ 81  
   1 
   1 
   1 
   1 
13. 7,506 ÷ 64  
14. 8,921 ÷ 59  
15. 21,472 ÷ 75  
16. 14,117 ÷ 17  
   1 
   1 
   1 
   1 
17. 72)8,136  
18. 39)4,579  
19. 27)2,835  
20. 49)7,116  
19. 23  
21. 13)3,926  
22. 81)9,446  
23. 35)7,105  
24. 6)3,109  

Match each check with a division problem.

25. (43 × 21) + 10 = 913  
26. (76 × 141) + 22 = 10,738  
27. (28 × 152) + 4 = 4,260  
28. (51 × 124) + 24 = 6,348  
   a. 10,738 ÷ 76 = 141 r22  
   b. 6,348 ÷ 51 = 124 r24  
   c. 913 ÷ 43 = 21 r10  
   d. 4,260 ÷ 28 = 152 r4  

Mixed Review

29. 35,482 + 28,453 = 63,935  
30. 6.75 × 0.75 = 5.0625  
31. 92.99 + 36.87 = 130.86  
32. 123 × 98 = 11,954  
33. 42,000 + 1,212 = 43,212
## Correcting Quotients

Write **too high, too low, or just right** for each estimate.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2</td>
<td>34)</td>
<td>105</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>26)</td>
<td>2,350</td>
<td>6.</td>
</tr>
</tbody>
</table>

Choose the better estimate to use for the quotient. Circle **a** or **b**.

9. | 23)|94  |   |   | a. | 4  |   |   | b. | 5  |
|---|---|---|---|---|---|---|---|---|---|---|

10. | 41)|173  |   |   | a. | 3  |   |   | b. | 4  |

11. | 68)|5,120  | a. | 700  |   |   |   |   | b. | 80  |

12. | 58)|31,167  | a. | 400  |   |   |   |   | b. | 600  |

Divide.

13. | 76)|308  |
14. | 23)|711  |
15. | 14)|296  |
16. | 39)|177  |

17. | 46)|1,726  |
18. | 29)|544  |
19. | 13)|98,603  |
20. | 57)|3,826  |

## Mixed Review

21. A total of 635 people signed up for a bus trip. Each bus can hold 48 people. Will 13 buses be enough for the trip?

22. A garden is 14 feet long and 11 feet wide. What is the area of the garden?

23. | 20)|4,000  |
24. | 417,389  |
25. | 6,243  |
26. | 12.5  |

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+</td>
<td>2,560</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>4,709</td>
</tr>
<tr>
<td></td>
<td>×</td>
<td>0.6</td>
</tr>
</tbody>
</table>
Practice Division

Divide.

1. $16)\overline{73}$  
2. $37)\overline{850}$  
3. $55)\overline{926}$  
4. $79)\overline{3,177}$

5. $35)\overline{219}$  
6. $96)\overline{7,428}$  
7. $41)\overline{2,659}$  
8. $27)\overline{1,167}$

9. $71)\overline{60,368}$  
10. $54)\overline{44,978}$  
11. $22)\overline{39,161}$  
12. $67)\overline{46,514}$

13. $63)\overline{4,144}$  
14. $37)\overline{2,187}$  
15. $84)\overline{76,167}$  
16. $52)\overline{78,667}$

17. $4,581 \div 32$  
18. $1,985 \div 23$  
19. $8,042 \div 91$

20. $25,401 \div 25$  
21. $11,933 \div 42$  
22. $3,751 \div 55$

Mixed Review

23. The students at Walnut Street School collected 3,102 cans for a recycling center. Each student brought in 6 cans. How many students attend the school?

24. The Sweet Shoppe sold 2,610 ice cream cones during the 30 days of June. It sold the same number of cones each day. How many cones were sold per day?

25. $87.562 \quad 26. \quad 25.76$  
$-14.787 \quad +68.34$  
$\times 0.35$  

27. $8.09$  

28. $25)\overline{800}$
Problem Solving Strategy

Predict and Test

Predict and test to solve.

1. Scott is 5 years old. His Aunt Mary is 4 times as old. In how many years will Scott be half as old as his aunt will be at that time?

2. The sum of two numbers is 42. Their product is 360. What are the two numbers?

3. A tunnel toll is $1.25 for cars and $2.00 for trucks. In one hour, $40.00 is collected from 23 vehicles. How many cars and trucks paid the toll?

4. Bob has 276 baseball cards. He keeps them in equal groups in boxes, and has started a new box with 3 cards in it. How many boxes of cards does he have? How many baseball cards are in each box?

Mixed Review

Solve.

5. \[ \frac{92,074}{\times 18} \]

6. \[ \frac{36,415}{\times 39} \]

7. \[ \frac{70,851}{\times 42} \]

8. \[ \frac{608,717}{\times 17} \]

9. \[ \frac{\sqrt{2,304}}{9} \]

10. \[ \frac{\sqrt{5,635}}{7} \]

11. \[ \frac{\sqrt{9,004}}{4} \]

12. \[ \frac{\sqrt{5,952}}{6} \]

13. The Scouts washed 12 cars one afternoon. They earned $6.50 for each car they washed. How much money did they earn?

14. The fence around Jan's backyard is 45 feet long and 30 feet wide. What is the perimeter of the fence? What is the area of the yard?
Algebra: Patterns in Decimal Division

Copy and complete each pattern.

1. \(600 \div 4 = \) _____
   \(60 \div 4 = \) _____
   \(6 \div 4 = \) _____
2. \(100 \div 5 = \) _____
   \(10 \div 5 = \) _____
   \(1 \div 5 = \) _____
3. \(200 \div 5 = \) _____
   \(20 \div 5 = \) _____
   \(2 \div 5 = \) _____
4. \(100 \div 4 = \) _____
   \(10 \div 4 = \) _____
   \(1 \div 4 = \) _____
5. \(1,400 \div 5 = \) _____
   \(140 \div 5 = \) _____
   \(14 \div 5 = \) _____
6. \(1,000 \div 4 = \) _____
   \(100 \div 4 = \) _____
   \(10 \div 4 = \) _____

Copy and complete each table. Use patterns and mental math.

7. \( \begin{array}{c|c}
    n & n \div 20 \\
    \hline
    10,000 & \_ \\
    1,000 & \_ \\
    100 & \_ \\
    10 & \_ \\
\end{array} \)

8. \( \begin{array}{c|c}
    n & n \div 90 \\
    \hline
    36,000 & \_ \\
    & 40 \\
    & \_ \\
    36 & \_ \\
\end{array} \)

9. \( \begin{array}{c|c}
    n & n \div 6 \\
    \hline
    3,000 & \_ \\
    300 & \_ \\
    & 5 \\
    3 & \_ \\
\end{array} \)

Write the check for each division problem.

10. \(40 \div 5 = 8\)
    \(4 \div 5 = 0.8\)

11. \(3,200 \div 80 = 40\)
    \(32 \div 80 = 0.4\)

12. \(2,800 \div 40 = 70\)
    \(28 \div 40 = 0.7\)

Mixed Review

13. Theresa has 120 bows to make. She can make 6 bows in 10 minutes. How long will it take her to make all of the bows?

14. Sid earns $60 dollars a week. He works 5 hours each week. How much does he earn per hour?

15. \(30 \times 60 = \) 
16. \(27.45 \times 0.14 = \)
17. Evaluate \(14 + (n + 40)\) if \(n = 50\).
Decimal Division

Make a model and find the quotient.

1. \(0.016 \div 4 = \underline{\text{______}}\)  
2. \(0.72 \div 8 = \underline{\text{______}}\)  
3. \(0.42 \div 6 = \underline{\text{______}}\)

4. \(4.8 \div 8 = \underline{\text{______}}\)  
5. \(2.24 \div 4 = \underline{\text{______}}\)  
6. \(4.98 \div 6 = \underline{\text{______}}\)

7. \(47.6 \div 7 = \underline{\text{______}}\)  
8. \$(0.18 \div 3 = \underline{\text{______}}\)  
9. \$(1.32 \div 4 = \underline{\text{______}}\)

10. \(22.4 \div 7 = \underline{\text{______}}\)  
11. \(0.63 \div 3 = \underline{\text{______}}\)  
12. \(3.5 \div 7 = \underline{\text{______}}\)

Use the model to complete the number sentence.

13. \(0.25 \div 5 = \underline{\text{______}}\)  
14. \(0.48 \div 4 = \underline{\text{______}}\)

15. \(2.8 \div 4 = \underline{\text{______}}\)  
16. \(2.4 \div 6 = \underline{\text{______}}\)

Mixed Review

17. \(4.35 \times 7.82\)  
18. \(600 \times 90\)  
19. \(58 \times 29\)  
20. \(368 \times 49\)

21. \(6.84 \times 0.32\)  
22. \(487 \times 61\)  
23. \(50 \overline{\text{6,875}}\)  
24. \(86.84 \times 3.24\)
Divide Decimals by Whole Numbers

Copy the quotient and correctly place the decimal point.

\[
\begin{align*}
7 & \overline{5.6} & 8 & \overline{5.6} & 107 & \overline{3.21} & 3 & \overline{3.21} & 48 & \overline{2.88} & 3 & \overline{2.88} & 54 & \overline{64.8} & 12 & \overline{64.8} \\
9 & \overline{19.35} & 9 & \overline{19.35} & 356 & \overline{249.2} & 7 & \overline{249.2} & 2004 & \overline{80.16} & 4 & \overline{80.16} & 1267 & 5 & \overline{73.35} & 5 & \overline{73.3}
\end{align*}
\]

Find the quotient. Check by multiplying.

\[
\begin{align*}
9 & 7 \overline{47} & 10 & 2 \overline{6.06} & 11 & 3 \overline{2.22} \\
12 & 14 \overline{674.24} & 13 & 12 \overline{61.08} & 14 & 13 \overline{325.52} \\
15 & 22.4 \div 7 & 16 & 237.5 \div 19 & 17 & 0.63 \div 3
\end{align*}
\]

Mixed Review

\[
\begin{align*}
18 & 4800 \div 3 & 19 & 748.57 & 20 & 13.406 & 21 & 76.49 \\
& + 16.38 & & - 1.839 & & \times 5
\end{align*}
\]

PW66 Practice
Problem Solving Strategy

Compare Strategies

Work backward or draw a diagram to solve.

1. Mary went shopping for school. She bought 3 pens at $1.75 each and 2 pads of paper for $3.75 each. She paid for these items using one bill. She received $7.25 in change. Was it a $10.00, $20.00, or $50.00 bill?

2. Mark bought two tickets for a show and paid for a dinner. After the show, Mark paid for some snacks. The dinner was $25.00, and each ticket was $12.50. Mark spent $55.00 altogether. How much did he spend on the snacks?

3. The Smythe’s went on a family vacation and drove 237 miles to Grandma’s house. Next they went to visit three cousins who each live 140 miles from each other. When they reached the last cousin’s house, the odometer read 48,392.6. What did the odometer read when they started out?

4. Tom and Blair live the same distance from their school. Marcia lives 2 blocks from the school, but 7 blocks from Blair. She lives 1 block closer to the school than she does to Tom. They all live on the same street as the school. How far apart do Tom and Blair live?

Mixed Review

5. Harry needs $160 to buy a bike. He has $70. If he saves $10 each week, how many weeks will it take him to save enough to buy the bike?

6. The difference between two numbers is 3.2. The sum of the numbers is 46.4. What could the two numbers be?

7. \(2.29 \times .73\)
8. \(7 \div 896\)
9. \(16.43 \times .809\)
10. \(13 \div 411\)
11. \(2,917 \times 18\)
Divide to Change a Fraction to a Decimal

Write as a decimal.

1. \(\frac{2}{5}\)  \(\frac{7}{10}\)  \(\frac{5}{10}\)  \(\frac{3}{6}\)

2. \(\frac{2}{8}\)  \(\frac{3}{4}\)  \(\frac{6}{8}\)  \(\frac{3}{20}\)

3. \(\frac{5}{8}\)  \(\frac{4}{16}\)  \(\frac{12}{20}\)  \(\frac{23}{25}\)

4. \(\frac{9}{8}\)  \(\frac{21}{40}\)  \(\frac{7}{16}\)  \(\frac{12}{40}\)

5. \(\frac{51}{80}\)  \(\frac{19}{80}\)  \(\frac{19}{40}\)  \(\frac{7}{20}\)

Mixed Review

21. Joanne has $0.66. She has 5 coins. What could they be?

22. Michele was making tuna salad for a party. The recipe for 10 servings called for 8 oz. of mayonnaise. There were 240 people expected to be at the brunch. How much mayonnaise would Michele need?

23. Order 7.491, 7.049, 7.794 from least to greatest.

24. Round 45.89745 to the nearest ten thousandths place.

25. How much greater is 24 \(\times\) 36 than 23 \(\times\) 35?

26. \(\frac{3}{10} + \frac{8}{10} = \)  

27. \(\frac{4}{15} + \frac{7}{15} = \)  

28. \(\frac{10}{12} - \frac{6}{12} = \)  

29. \(\frac{14}{29} - \frac{11}{29} = \)  

30. \(\frac{15}{40} - \)  

31. \(\frac{13}{52} = \frac{27}{52}\)  

32. \(\frac{4}{19} + \)  

33. \(\frac{17}{20} - \)  

PW68 Practice
Algebra: Patterns in Decimal Division

Complete each multiplication pattern. Then write the related division pattern.

1. $9 \times 7 = 63$
   - $0.9 \times 7 = \text{_____}$
   - $0.09 \times 7 = \text{_____}$

2. $68 \times 6 = 408$
   - $6.8 \times 6 = \text{_____}$
   - $0.68 \times 6 = \text{_____}$

3. $44 \times 9 = 396$
   - $4.4 \times 9 = \text{_____}$
   - $0.44 \times 9 = \text{_____}$

4. $4 \times 5 = 20$
   - $0.4 \times 5 = \text{_____}$
   - $0.04 \times 5 = \text{_____}$

5. $73 \times 3 = 219$
   - $7.3 \times 3 = \text{_____}$
   - $0.73 \times 3 = \text{_____}$

6. $83 \times 8 = 664$
   - $8.3 \times 8 = \text{_____}$
   - $0.83 \times 8 = \text{_____}$

Complete each division pattern.

7. $90 \div 30 = 3$
   - $9.0 \div 3.0 = \text{_____}$
   - $0.90 \div 0.30 = \text{_____}$

8. $80 \div 16 = 5$
   - $8.0 \div 1.6 = \text{_____}$
   - $0.80 \div 0.16 = \text{_____}$

9. $169 \div 13 = 13$
   - $16.9 \div 1.3 = \text{_____}$
   - $1.69 \div 0.13 = \text{_____}$

Algebra Use basic facts and patterns to solve for $n$.

10. $28 \div 0.04 = n$
    - $\text{_____}$

11. $0.24 \div 0.08 = n$
    - $\text{_____}$

12. $3.6 \div n = 0.09$
    - $\text{_____}$

Mixed Review

13. Write a number with the place value of hundredths between 24.56 and 24.60.

14. Estimate the sum of 2,568,986 and 6,234,972 to the nearest 100 thousand.
Divide with Decimals

Make a model to find the quotient. Record a division equation for each model.

1. \(3.6 \div 0.9 = \)  
2. \(3.2 \div 0.8 = \)  
3. \(2.8 \div 0.7 = \)

4. \(0.9 \div 0.3 = \)  
5. \(0.16 \div 0.02 = \)  
6. \(2 \div 0.5 = \)

7. \(0.42 \div 0.07 = \)  
8. \(0.54 \div 0.06 = \)  
9. \(0.63 \div 0.07 = \)

Use the model. Complete the equation.

10. \[1.5 \div 0.3 = \]  

11. \[1.26 \div 0.42 = \]  

12. \[1.2 \div 0.6 = \]  

13. \[1.36 \div 0.34 = \]

Mixed Review

14. \(325.6 \div 4 = \)

15. \[423.15 \times 2.3 \]

16. \(4,347,568 - 2,928,471\)
Decimal Division

Place the decimal point in the quotient. Draw arrows to help you.

1. $0.5 \overline{)6.15}$  
2. $0.7 \overline{)5.04}$  
3. $0.025 \overline{)14.50}$  
4. $0.08 \overline{)3.36}$

5. $0.6 \overline{)2.94}$  
6. $0.2 \overline{)4.82}$  
7. $0.5 \overline{)2.25}$  
8. $0.9 \overline{)5.31}$

Divide.

9. $0.8 \overline{)4.16}$  
10. $0.6 \overline{)2.52}$  
11. $0.15 \overline{)9.45}$  
12. $0.45 \overline{)10.35}$

13. $0.7 \overline{)37.1}$  
14. $0.05 \overline{)4.65}$  
15. $0.9 \overline{)2.34}$  
16. $0.2 \overline{)5.8}$

17. $38.4 \div 2.4$  
18. $3.9 \div 1.5$  
19. $2.03 \div 0.7$  
20. $6.48 \div 1.8$

21. $0.16 \div 0.16$  
22. $15.2 \div 0.04$  
23. $5.12 \div 0.16$  
24. $1.04 \div 0.8$

Patterns  Divide. Then describe a pattern in the quotients.

25. a. $7.2 \div 1.8$  
26. a. $9.6 \div 1.2$  
27. a. $12 + n = 12$  
28. a. $n + 3 = 14$  
29. a. $12 \times n = 144$  
30. a. $n - 7 = 6$

b. $7.2 \div 0.18$  
c. $7.2 \div 0.018$

b. $9.6 \div 0.12$  
c. $9.6 \div 0.012$

Mixed Review

Solve.

27. $12 + n = 12$  
28. $n + 3 = 14$  
29. $12 \times n = 144$  
30. $n - 7 = 6$
Problem Solving Skill

Choose the Operation

Solve. Name the operation or operations you used.

1. An oak tree measured about 52 ft. high. How many inches would it measure?

2. In 1997 it was estimated that there were 441,297 people living in Charlotte, North Carolina and 195,426 people living in Greensboro, North Carolina. How many more people lived in Charlotte than in Greensboro?

3. Oranges cost $3.00 a dozen. How much would 3 oranges cost?

4. An elephant takes approximately two years to bear a baby elephant. How many days would that be?

5. How many more ships does Panama own than Germany and the United States together?

   A 2,925
   B 3,829
   C 3,461
   D 1,762

6. What operation would you use to find the total number of ships owned by China, Germany and the United States?

   F Multiplication
   G Addition
   H Subtraction
   J Division

Mixed Review

7. Suzanne earned $24.00 for babysitting for 4 hours. How much did she earn in 1 hour?

8. Cindy's dog had a litter of 5 puppies last year and another litter of 6 puppies this year. Write an expression for this.
Divisibility

Vocabulary

Fill in the blank.

1. A number is \underline{______________} by another number if the quotient is a whole number and the remainder is zero.

Tell if each number is divisible by 2, 3, 4, 5, 6, 9, or 10.

2. 54  
3. 144  
4. 420  
5. 864  

6. 990  
7. 1,224  
8. 3,600  
9. 6,618  

10. 234  
11. 684  
12. 1,827  
13. 2,475  

14. 675  
15. 288  
16. 842  
17. 540  

Mixed Review

18. \(\frac{9}{37}\)  
19. \(\frac{44}{794}\)  
20. \(0.06 \div 3\)  
21. \(0.04 \div 0.2\)  

22. Marie made 3 dozen cookies. She needs to divide them evenly into groups greater than 4. What are all the possible equal-size groups into which she can divide the cookies?

23. Ted needs to divide 60 stickers into equal groups. What are all the possible equal-size groups into which he can divide the stickers?
Multiples and Least Common Multiples

Vocabulary

Complete.

1. The product of two or more nonzero whole numbers is a ________________.

2. Multiples of one number that are also multiples of another number are called ________________.

3. The least number that is a common multiple is called the ________________ or __________.

List the first 6 multiples of each number.

4. 2

5. 3

6. 7

--------

---

7. 9

8. 10

9. 6

Find the least common multiple for each set of numbers.

10. 3, 4 _____

11. 2, 6 _____

12. 4, 5 _____

13. 3, 7 _____

14. 8, 6 _____

15. 4, 6 _____

16. 5, 6 _____

17. 4, 7 _____

Mixed Review

Order from greatest to least.

18. 17.86, 17.87, 17.78, 17.36

19. 1,555; 5,151; 5,515; 1,515

--------

Solve.

20. 7,080 + 708 + 8,070 + 807

21. \( \frac{5}{2} - \frac{3}{4} \)

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PW74 Practice
Greatest Common Factor

Vocabulary

Fill in the blanks.

1. The greatest factor that two or more numbers have in common
   is the ____________________________ or ____________.

List the factors for each number.

2. 6
   __________________

3. 20
   __________________

4. 32
   __________________

Write the common factors for each set of numbers.

5. 12, 36
   __________________

6. 4, 20, 24
   __________________

7. 9, 18, 27
   __________________

Write the greatest common factor for each set of numbers.

8. 6, 8
   GCF __________________

9. 9, 12
   GCF __________________

10. 15, 21
    GCF __________________

11. 22, 44
    GCF __________________

12. 12, 54
    GCF __________________

13. 7, 42, 70
    GCF __________________

14. 10, 50, 70
    GCF __________________

15. 18, 45, 54
    GCF __________________

16. 3, 30, 33
    GCF __________________

Mixed Review

17. 232
    174
    + 216

18. 872
    704
    + 205

19. 512
    414
    + 781

20. 480
    754
    + 841
Problem Solving Skill

Identify Relationships

Use the relationships between the given numbers to find the missing number.

1. The GCF of 8 and another number is 1. The LCM is 24. What is the number?

2. The GFC of 9 and another number is 1. The LCM is 45. What is the number?

3. The LCM of 16 and 4 is 16. What is the GCF?

4. The GCF of 13 and 2 is 1. What is the LCM of 13 and 2?

5. The GCF of 9 and 7 is 63. What is the LCM of 9 and 7?

6. The LCM of 9 and 18 is 18. What is the GCF?

7. The GCF of 16 and 12 is 4. What is the LCM of 12 and 16?

8. The LCM of two numbers is 56. What are the numbers?

Mixed Review

9. Evaluate \((n + 3) - 9\) if \(n = 15\)

10. \(3.2 \overline{9.12}\)

11. Write seven million, six hundred thousand, eighty-three in standard form.

12. If a number is divisible by 9, what other number is it also divisible by?

13. \(1,674 \times 85\)

14. \(6,819 \times 5\)

15. \(4,242 \times 21\)

16. \(849 \times 69\)
Prime and Composite Numbers

Vocabulary

1. A ________________ has exactly two factors, 
   1 and the number itself.

2. A ________________ has more than two factors.

Write all the arrays for each number. Write prime or composite for each number.

3. 8
   ___________________

4. 7
   ___________________

5. 12
   ___________________

6. 9
   ___________________

7. 6
   ___________________

8. 5
   ___________________

Write prime or composite for each number.

9. 30
   ___________________

10. 16
    ___________________

11. 24
    ___________________

12. 21
    ___________________

Mixed Review

Find the least common multiple (LCM).

13. 6, 7, 3
    ___________________

14. 7, 8, 10
    ___________________

15. 2, 5, 6
    ___________________

16. 3, 4, 7
    ___________________

17. The area of Sharon’s garden is 40 sq ft. List all the possible lengths and widths of Sharon’s garden.
    ___________________

18. Beth has $0.60 more than Suzy. Together they have $8.20. How much money does each girl have?
    ___________________
Introduction to Exponents

Write in exponent form.

1. 10,000,000,000
   ____________

2. 100,000
   ____________

3. 100,000,000
   ____________

4. 1,000,000,000
   ____________

5. 10,000
   ____________

6. 100,000,000,000
   ____________

Find the value.

7. $10^9$
   ____________

8. $10^6$
   ____________

9. $10^4$
   ____________

10. $10^5$
    ____________

11. $10^7$
    ____________

12. $10^{10}$
    ____________

Find the value of \( n \).

13. $10 \times n \times 10 = 10^3$
    ____________

14. $100,000 = 10^n$
    ____________

15. $1,000,000 = 10^n$
    ____________

Compare. Write <, >, or = in each □.

16. 10,000 □ $10^5$
    ____________

17. $10^4$ □ 10,000
    ____________

18. $10 \times 100$ □ $10^3$
    ____________

Mixed Review

Order from least to greatest.

19. 1.939, 1.393, 3.919, 91.93, 3.199
    ____________

Order from greatest to least.

20. 2.345, 2.543, 2.435, 2.534, 2.453
    ____________

Compare. Write <, >, or = in each □.

21. 5.9376 □ 5.3897
    ____________

22. 8.639 □ 8,639
    ____________

23. 3,384,844 □ 3,038,484
    ____________

24. William gives $\frac{3}{5}$ of his energy bar to James and $\frac{1}{2}$ to Phyllis. How much does William have left?
    ____________

25. What type of graph would you use to display the ages of students in your classroom?
    ____________
Evaluate Expressions with Exponents

Write the equal factors.

1. \(9^3\)  
2. \(7^6\)  
3. \(12^5\)  
4. \(21^4\)

Write each expression by using an exponent.

5. \(6 \times 6 \times 6 \times 6 \times 6 \times 6 \times 6\)  
6. \(75 \times 75 \times 75 \times 75 \times 75\)

7. \(53 \times 53 \times 53 \times 53 \times 53 \times 53\)  
8. \(9 \times 9 \times 9 \times 9 \times 9 \times 9\)

Find the value.

9. \(14^2\)  
10. \(6^4\)  
11. \(3^6\)  
12. \(12^3\)

13. \(7^4\)  
14. \(1^{10}\)  
15. \(11^5\)  
16. \(42^2\)

Find the value of \(n\).

17. \(n^4 = 16\)  
18. \(6^n = 108\)  
19. \(5^n = 625\)  
20. \(11^n = 1,331\)

Mixed Review

Solve.

21. \(3,302 \times 41\)  
22. \(45 \div 2,025\)

23. \(1,296 \div 36\)  
24. \(36 \div 46,656\)

25. \(7,905 \times 62\)  
26. \(17 \div 9,520\)

27. \(5,461 \times 33\)  
28. \(29 \div 24,418\)
Exponents and Prime Factors

Complete.

1. $36 = 2 \times \square \times 3 \times \square$

2. $9 \times 4 = \square \times \square \times \square \times 5$

3. $44 = \square \times 2 \times 11$

4. $48 = 2 \times \square \times \square \times \square \times 3$

Rewrite the prime factorization by using exponents.

5. $3 \times 5 \times 3 \times 5$

6. $6 \times 6 \times 6 \times 4 \times 4$

7. $2 \times 2 \times 3 \times 2 \times 3 \times 2$

8. $8 \times 4 \times 4 \times 8 \times 4$

9. $5 \times 5 \times 5 \times 5 \times 13$

10. $64 \times 64 \times 64 \times 64$

Find the prime factorization of the number. Use exponents when possible.

11. 32

12. 49

13. 54

14. 81

15. 144

16. 256

Complete the prime factorization. Find the value of the variable.

17. $5 \times 5 \times 5 \times 5 = 5^n$

18. $3^2 \times n = 36$

19. $5^2 \times 5^r = 225$

20. $7 \times 7 \times 2^w = 392$

21. $2 \times 3 \times 5^d = 150$

22. $13^m \times 2^4 = 208$

Mixed Review

23. $\overset{3}{\overline{8,142}}$

24. $\overset{2}{\overline{256}}$

25. $\overset{2}{\overline{42,877}}$

26. $\overset{2}{\overline{3,458}}$
Relate Decimals to Fractions

Write a fraction for each decimal.

1. 0.2
2. 0.14
3. 0.127
4. 0.68
5. 0.05
6. 0.84
7. 0.8
8. 0.28
9. 0.01
10. 0.678
11. 0.35
12. 0.61

Write a decimal for each fraction.

13. \(\frac{6}{10}\)
14. \(\frac{83}{100}\)
15. \(\frac{39}{100}\)
16. \(\frac{645}{1000}\)
17. \(\frac{3}{10}\)
18. \(\frac{1}{100}\)
19. \(\frac{71}{100}\)
20. \(\frac{16}{1000}\)
21. \(\frac{5}{10}\)
22. \(\frac{12}{100}\)
23. \(\frac{199}{1000}\)
24. \(\frac{33}{100}\)

Mixed Review

25. 122
26. 138
27. 1,302
28. 21.2
29. 122 + 2,996
30. 138 + 1,381
31. 1,302 + 39.6
32. 21 + 999,875

29. 13,274
30. 7,520
31. 967,794
32. 423,681
29. 13,274 − 2,016
30. 7,520 + 1,381
31. 967,794 − 205,418
32. 423,681 + 999,875

33. 779
34. 4,782
35. 48,119
36. 361,195
33. 779 × 6
34. 4,782 × 3
35. 48,119 × 7
36. 361,195 × 5
Equivalent Fractions

Use the number lines to name an equivalent fraction for each.

1. \(\frac{1}{4}\)  2. \(\frac{4}{8}\)  3. \(\frac{3}{4}\)

Write an equivalent fraction. Use multiplication or division.

4. \(\frac{2}{4}\)  5. \(\frac{18}{20}\)  6. \(\frac{3}{8}\)  7. \(\frac{7}{21}\)
8. \(\frac{3}{5}\)  9. \(\frac{2}{15}\)  10. \(\frac{8}{12}\)  11. \(\frac{10}{16}\)

Which fraction is not equivalent to the given fraction? Circle a, b, or c.

12. \(\frac{2}{3}\)  a. \(\frac{6}{9}\)  b. \(\frac{5}{6}\)  c. \(\frac{8}{12}\)
13. \(\frac{9}{15}\)  a. \(\frac{3}{5}\)  b. \(\frac{18}{30}\)  c. \(\frac{16}{25}\)
14. \(\frac{6}{8}\)  a. \(\frac{10}{12}\)  b. \(\frac{3}{4}\)  c. \(\frac{24}{32}\)
15. \(\frac{3}{7}\)  a. \(\frac{6}{14}\)  b. \(\frac{14}{28}\)  c. \(\frac{21}{49}\)

Mixed Review

16. René and 6 friends decide to order lasagna. Each tray of lasagna is cut into 12 pieces. How many trays of lasagna will they have to buy in order for everyone to get 3 pieces? How many pieces will be left over?

17. Andy bought a pack of 16 pencils and gave 4 pencils away to friends. Write two equivalent fractions to represent the part of the pencils that Andy gave away.

Solve the equation.

18. \(5 \times n = 80\)  19. \(60 \div n = 6\)  20. \(75 + n = 90\)  21. \(n - 3 = 9\)
22. \(n \times 8 = 32\)  23. \(144 \div n = 12\)  24. \(26 + n = 64\)  25. \(18 - n = 7\)
**Compare and Order Fractions**

Rename, using the LCM, and compare. Write <, >, or = in each $\bigcirc$.

1. $\frac{3}{12} \bigcirc \frac{5}{8}$
2. $\frac{2}{8} \bigcirc \frac{7}{32}$
3. $\frac{6}{8} \bigcirc \frac{3}{9}$
4. $\frac{2}{3} \bigcirc \frac{6}{9}$
5. $\frac{5}{6} \bigcirc \frac{3}{4}$
6. $\frac{3}{15} \bigcirc \frac{1}{3}$
7. $\frac{6}{22} \bigcirc \frac{3}{11}$
8. $\frac{3}{7} \bigcirc \frac{6}{21}$
9. $\frac{5}{6} \bigcirc \frac{5}{8}$
10. $\frac{3}{7} \bigcirc \frac{11}{14}$
11. $\frac{7}{12} \bigcirc \frac{3}{8}$
12. $\frac{9}{10} \bigcirc \frac{6}{7}$
13. $\frac{12}{40} \bigcirc \frac{6}{10}$
14. $\frac{4}{5} \bigcirc \frac{2}{4}$
15. $\frac{4}{7} \bigcirc \frac{1}{2}$
16. $\frac{3}{4} \bigcirc \frac{8}{9}$

Write in order from least to greatest.

17. $\frac{2}{5}, \frac{2}{3}, \frac{4}{15}$
18. $\frac{2}{3}, \frac{3}{4}, \frac{7}{12}$
19. $\frac{7}{9}, \frac{1}{2}, \frac{11}{18}$
20. $\frac{5}{6}, \frac{1}{4}, \frac{5}{12}$
21. $\frac{4}{5}, \frac{7}{10}, \frac{1}{2}$
22. $\frac{9}{15}, \frac{2}{3}, \frac{2}{5}$

**Mixed Review**

23. $16 \times 15$
24. $2 \div 698$
25. $5.7 + 6.8$
26. $1.2 \times 3$
27. $20 + (30 - 2)$
28. $28 \times 26$
29. $67 - 28$
30. $6.6 + 7.8$

31. Petra loves animals. She has twelve pets in all, four of which are rabbits. Write a fraction to describe the number of rabbits she has.

32. Flora’s Flowers sells 3 roses for $13.50. The Green Thumb sells 4 roses for $15.00. Discount Flowers sells 6 roses for $23.00. Who sells roses at the lowest price?
**Simplest Form**

Tell whether the fraction is in simplest form. Write yes or no.

1. \(\frac{3}{4}\) ____  
2. \(\frac{6}{8}\) ____  
3. \(\frac{7}{21}\) ____

4. \(\frac{14}{15}\) ____  
5. \(\frac{12}{15}\) ____  
6. \(\frac{7}{9}\) ____

Write each fraction in simplest form.

7. \(\frac{4}{10}\) ____  
8. \(\frac{3}{8}\) ____  
9. \(\frac{6}{12}\) ____

10. \(\frac{6}{15}\) ____  
11. \(\frac{2}{3}\) ____  
12. \(\frac{4}{16}\) ____

13. \(\frac{2}{8}\) ____  
14. \(\frac{8}{12}\) ____  
15. \(\frac{8}{24}\) ____

16. \(\frac{3}{9}\) ____  
17. \(\frac{4}{15}\) ____  
18. \(\frac{7}{17}\) ____

**Mixed Review**

Solve.

19. \(3,000 \div 100\)  
20. \(485 \div 100\)  
21. \(48,000 \div 200\)  
22. \(15.68 \times 3\)

____  
____  
____  
____

23. Jean-Paul uses \(\frac{1}{3}\) cup walnuts, \(\frac{1}{8}\) cup chocolate chips, and \(\frac{1}{2}\) cup coconut in his cookie recipe. Of these ingredients, which is used the most? Use fraction bars to explain your answer.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

24. Mary ran \(\frac{3}{4}\) mile, Lila ran \(\frac{2}{3}\) mile, and Sue ran \(\frac{3}{8}\) mile. Who ran the farthest? Draw a diagram to solve.
Understand Mixed Numbers

Vocabulary

Complete.

1. A ______________________________ is made up of a whole number and a fraction.

For 2–5, use the figures at the right.

2. How many whole figures are shaded?

3. Into how many parts is each figure divided?

4. How many parts of the fifth figure are shaded?

5. Write a fraction and a mixed number for the figures.

Write each fraction as a mixed number.

6. \( \frac{22}{7} \) \[ 
7. \( \frac{7}{5} \) \[ 
8. \( \frac{19}{4} \) \[ 
9. \( \frac{13}{2} \) \[ 

Write each mixed number as a fraction.

10. \( \frac{4\frac{2}{3}}{3} \) \[ 
11. \( \frac{\frac{14}{6}}{6} \) \[ 
12. \( \frac{3\frac{2}{5}}{5} \) \[ 
13. \( \frac{2\frac{2}{4}}{4} \) \[ 

Mixed Review

14. Sam watched 10 cars drive past him. 6 of those cars were white. Write a fraction to describe the fraction of white cars.

15. Maria takes 6 classes. In 5 of those classes, she has an A. Write a fraction to describe the fraction of classes in which she has an A.
Problem Solving Strategy

Make a Model

Make a model to solve.

1. Samantha bought 3 packets of stickers. Each packet contains 100 stickers. If she divides all of the stickers evenly among 6 friends and herself, how many stickers are left over?

2. One day, \( \frac{2}{8} \) of the patients brought to a veterinary hospital were rabbits, \( \frac{1}{2} \) were cats, and \( \frac{1}{4} \) were dogs. Which kind of animal did the vet see the most that day?

3. James uses \( \frac{5}{6} \) meter of butcher paper to make one sign. How many meters of paper will he need to make 3 signs?

4. Brent decorated \( \frac{1}{6} \) of his sugar cookies with blue frosting, \( \frac{1}{4} \) with yellow frosting, and \( \frac{3}{8} \) with purple frosting. Which frosting was used the least?

Mixed Review

Solve.

5. During the week, Carrie spent $3.50 for a book. The next day her father gave her $1.25. Then she went to a movie, which cost $7.50. If she now has $10.25, how much money did she have at the beginning of the week?

6. A pizza parlor has a special offer of a mini-pizza with one topping. Customers can choose thin or thick crust, and they have 4 choices of toppings: pepperoni, sausage, extra cheese, or olives. How many choices do customers have?

7. \( 64 \div n = 8 \)  
8. \( 64 \div 3 = n \)  
9. \( 121 \div n = 11 \)  
10. \( n - 7 = 7 \)
Understand Ratios

Vocabulary

Fill in the blank.

1. A _______________ is a comparison of two quantities.

Write each ratio and name the type of ratio.

2. There were 4 baseballs and 6 basketballs.

3. Margo had 3 quarters and 2 pennies.

4. Recess is preferred by 19 of 20 students.

5. Of 20 students, 11 are boys.

Write each ratio.

6. wings to planes

7. flowers to stem

8. legs to spiders

9. fingers to hands

Mixed Review

Write each fraction in simplest form.

10. \( \frac{12}{24} \)

11. \( \frac{6}{9} \)

12. \( \frac{28}{49} \)

13. \( \frac{96}{144} \)

14. \( \frac{40}{45} \)
Express Ratios

Write each ratio in three ways. Then name the type of ratio. Use the table below.

1. race games to sports games
   - 
   - 

2. all games to arcade games
   - 
   - 

3. sports games to all games
   - 
   - 

Circle a or b to show which fraction represents each ratio.

4. 7 to 9
   - a. \( \frac{9}{7} \)  
   - b. \( \frac{7}{9} \)  

5. 6:2
   - a. \( \frac{6}{2} \)  
   - b. \( \frac{2}{6} \)  

6. 9:3
   - a. \( \frac{9}{3} \)  
   - b. \( \frac{3}{9} \)

7. 11 to 16
   - a. \( \frac{16}{11} \)  
   - b. \( \frac{11}{16} \)

For 8–10, use the circle graph. Write each ratio in three ways.

8. What is the ratio of pictures to records?
   - 

9. What is the ratio of pictures to all collectibles?
   - 

10. What is the ratio of figurines to all collectibles?
   - 

Mixed Review

11. Brian had a triangle with a 90° angle and a 19° angle. How many degrees did the third angle have?
   - 

12. Erik discovered he was \( \frac{3}{4} \) as tall as Wilt Chamberlain, the NBA legend. Chamberlain is 86 inches tall. How tall is Erik?
   - 

Ben’s Video Game Collection

<table>
<thead>
<tr>
<th>Type of Game</th>
<th>Number of Games</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>5</td>
</tr>
<tr>
<td>Arcade</td>
<td>3</td>
</tr>
<tr>
<td>Sports</td>
<td>2</td>
</tr>
</tbody>
</table>
Equivalent Ratios

Vocabulary

1. _____________________________ are ratios that name the same amount.

Tell whether the following ratios are equivalent. Write yes or no.

2. $\frac{3}{8}$ and $\frac{9}{24}$
3. 4:5 and 5:4
4. 7 to 4 and 28 to 16

5. $\frac{8}{4}$ and $\frac{2}{1}$
6. 6:8 and 2:4
7. 3 to 15 and 4 to 20

Write three ratios that are equivalent to the given ratio.

8. 7:1
9. 6:3

10. 3 to 2
11. $\frac{13}{15}$

Complete the ratio table.

<table>
<thead>
<tr>
<th>Number of oranges to make orange juice</th>
<th>5</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pints of orange juice</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Find $n$ to make the ratios equivalent.

13. $\frac{n}{4} = \frac{6}{12}$
14. $\frac{8}{n} = \frac{24}{9}$
15. $\frac{3}{n} = \frac{15}{30}$

Mixed Review

16. $\sqrt{36.36}$
17. $\sqrt{158.67}$
18. $\sqrt{588.42}$
19. $\sqrt{0.180}$
20. $\sqrt{53.652}$
**Scale Drawings**

**Vocabulary**

Fill in the blank.

1. A ratio that compares the distance on a map to the actual distance is a ____________________________.

Copy and complete the ratio table.

<table>
<thead>
<tr>
<th></th>
<th>Scale Distance (in.)</th>
<th>1</th>
<th>2</th>
<th>_____</th>
<th>7</th>
<th>_____</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Actual Length (ft)</td>
<td>18</td>
<td>36</td>
<td>90</td>
<td></td>
<td>198</td>
</tr>
<tr>
<td>4.</td>
<td>Scale Distance (cm)</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>5.</td>
<td>Actual Length (m)</td>
<td>7</td>
<td>28</td>
<td>_____</td>
<td>84</td>
<td>_____</td>
</tr>
</tbody>
</table>

For 6–9, use the drawing of the patio and the scale.

6. What is the width of the pool in units? ____________________________________________

7. What is the actual width of the pool? ____________________________________________

8. What is the perimeter of the pool house in units? in feet? ____________________________

9. What is the ratio of linear units to feet? __________________________________________

**Mixed Review**

10. How much ribbon will Fran have left from a 20-yd bolt after cutting off $5\frac{1}{2}$ yd?

11. Miguel’s yard is 28 ft long and 36 ft wide. It costs $0.50 per square foot to have grass planted. What is the total cost?
Problem Solving Skill

Too Much/Too Little Information

For 1–4, use this chart. Write whether each problem has too much or too little information. Then solve if possible, or describe the additional information needed.

1. How many students are there in the fourth grade for every lunch buyer?

2. How many adult buyers are there for every buyer in fifth grade?

3. What is the ratio of school population to lunch buyers?

4. What is the ratio of grades 3 through 5 lunch buyers to classes 3 through 5?

Charneta loves a puppy at the pet store. His name is Beau, and he's a German shepherd. Beau costs $150.00. Charneta will work at Mr. Taylor's store for $4.00 an hour, sweeping floors and stocking shelves. How long will she have to work to buy the dog?

5. What information is necessary to solve the problem?
   - A the name of the dog
   - B what kind of work Charneta will do
   - C how much money she will make an hour
   - D the store owner's age

6. What is the fewest number of hours Charneta can work and still afford to buy the dog?
   - F 37.5 hours
   - G 39 hours
   - H 40 hours
   - J 41 hours

Mixed Review

7. $22.21 + 78.99
8. $47.50 \times 1.50
9. 32.498 – 17.020
10. 156.52 + 819.75

Practice PW91
Understand Percent

Model each ratio. Then write the percent.

1. 67 cents out of 1 dollar
   
   [Diagram of 100 squares, 67 shaded]

2. 16 sheep out of 100 animals
   
   [Diagram of 100 squares, 16 shaded]

3. 58 girls out of 100 children
   
   [Diagram of 100 squares, 58 shaded]

Write a percent to describe the shaded part.

4. Percent ______
5. Percent ______
6. Percent ______

Choose the more reasonable percent. Circle a or b.

7. “About half the students bring their own lunches to school,” said the cafeteria worker.
   a. 55 percent
   b. 85 percent

8. “Very few children are sent to the principal’s office,” said the teacher.
   a. 98 percent
   b. 2 percent

Mixed Review

Write as a decimal and a fraction.

9. thirty-nine hundredths
   
   0.39
   \( \frac{39}{100} \)

10. forty-four hundredths
    
    0.44
    \( \frac{44}{100} \)
Relate Decimals and Percents

For 1–4, use the circle graph. Write a decimal and a percent to describe each.

1. What part of the library books are Art books?

2. What part of the library books are English books?

3. What part of the library books are not History books?

4. What part of the library books are not Math books?

Write the number as a decimal and a percent.

5. sixty-four hundredths

6. ninety-three hundredths

7. fifteen hundredths

8. thirty hundredths

Write each decimal as a percent.

9. 0.46

10. 0.79

11. 0.20

12. 0.03

13. 0.18

14. 0.86

Write each percent as a decimal.

15. 38%

16. 74%

17. 2%

18. 16%

19. 22%

20. 91%

Mixed Review

21. $12 \times 8$

22. $16 \times 37$

23. $90 \times 80$

24. $14 \times 14$

25. $34 \times 26$
Relate Fractions, Decimals, and Percents

Complete the tables. Write each fraction in simplest form.

<table>
<thead>
<tr>
<th>Fraction</th>
<th>Decimal</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>12%</td>
</tr>
<tr>
<td>2. (\frac{3}{4})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. (\frac{17}{20})</td>
<td></td>
<td>24%</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Express the shaded part of each model as a decimal, a percent, and a fraction in simplest form.

5. [Shaded model]
6. [Shaded model]
7. [Shaded model]

Compare. Write <, >, or = in each □.

8. 11% □ 0.11
9. 75% □ \(\frac{1}{3}\)
10. 15% □ 1.5
11. 50% □ 0.25

Tell whether each fraction or decimal is greater than 100% or between 1% and 100%. Write greater or between.

12. \(\frac{600}{100}\)
13. \(\frac{1}{2}\)
14. 6.9
15. \(\frac{1}{8}\)

Mixed Review

Estimate, then find the exact sum, product, or difference.

16. \[294,432 + 126,008\]
17. \[9,009 \times 621\]
18. \[237,432 - 49,163\]
19. \[241,430 + 798,790\]
20. \[6,855 \times 530\]
21. \[257,743 - 68,889\]
Find a Percent of a Number

Find the percent of the number.

1. 5% of 50 ______  
2. 15% of 45 ______  
3. 35% of 42 ______  
4. 200% of 80 ______  
5. 150% of 20 ______  
6. 65% of 150 ______  
7. 60% of 93 ______  
8. 60% of 60 ______  
9. 150% of 75 ______  
10. 25% of 200 ______  
11. 2% of 48 ______  
12. 40% of 150 ______

You can find the sales tax for any item you buy by finding a percent of the price. Find the sales tax for each price to the nearest cent.

13. price: $9.75  
tax rate: 3%  
14. price: $101.4  
tax rate: 6%  
15. price: $172.00  
tax rate: 11%  
16. price: $63.99  
tax rate: 8%

Mixed Review

17. How many dimes are in $28.00? ______

18. Is 1.314 greater than or less than 1.341? ______

19. At $0.45 per dozen, how many dozens of oranges can you buy for $1.35? ______

20. A poultry farmer bought 2,000 chicks at $0.45 each. What did he pay for the chicks? ______

21. A butcher charged $7.44 for a certain cut of meat at $0.96 per pound. What was the weight of the meat? ______

22. The local baseball team bought 10 bats at $18.00 each and 7 balls at $1.98 each. If the 9 players shared the costs equally, how much was each player's share? ______

23. 17 × 0.8  
24. 42.5 × 1.6  
25. 3.55 × 20  
26. 170 × 2.9  
27. 4,615 × .88
Mental Math: Percent of a Number

Use mental math to find the percent of each number.

1. 150% of 500  
2. 60% of 100  
3. 40% of 25  
4. 30% of 280

5. 16% of 200  
6. 150% of 300  
7. 200% of 60  
8. 98% of 300

9. 85% of 200  
10. 10% of 50  
11. 80% of 225  
12. 55% of 200

13. 60% of 300  
14. 70% of 400  
15. 20% of 20  
16. 72% of 300

17. 10% of 120  
18. 30% of 180  
19. 50% of 96  
20. 100% of 300

Mixed Review

For 21–24, write each in two other forms.

21. one and four hundredths  
22. three and six tenths

23. 101.79  
24. 2.875

25. James earns $72.00 for 6 hours of work. How much does he earn for 4 hours of work? for 1 hour?

26. The GCF of 9 and another number is 3. The LCM is 36. What is the number?

27. $2.50 \times 7 = \underline{\hspace{2cm}}  
28. $39.90 \times 2 = \underline{\hspace{2cm}}
Problem Solving Strategy

Make a Graph

Make a graph and solve.

1. Abigail surveyed the fifth-grade students to find out their favorite TV shows. She organized the data in the table at the right. What is the best way for her to display the data? Which TV show is most popular?

<table>
<thead>
<tr>
<th>FAVORITE TV SHOWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show</td>
</tr>
<tr>
<td>Plimpton</td>
</tr>
<tr>
<td>Queen of the Hill</td>
</tr>
<tr>
<td>Atlas</td>
</tr>
<tr>
<td>Harborwatch</td>
</tr>
<tr>
<td>The Butler</td>
</tr>
</tbody>
</table>

Mixed Review

Solve.

2. Tamala recorded the average temperature for 6 months. She recorded 48° in April, 59° in May, 69° in June, 76° in July, 74° in August, and 64° in September. How can she show this data?

3. Mylan spent $3 on a magazine. He spent half of his remaining money on a video game. He then spent half of his remaining money on a book. He had $12 left. How much money did Mylan begin with?

4. A dog pen will be 18 feet long and 12 feet wide. One length will be formed by the side of a garage. How much fencing is needed for the other 3 sides?

5. There were 63 people in a hotel. Then 7 checked out, and 3 times that number checked in. How many people are in the hotel now?
Compare Data Sets

For 1–8, use the two circle graphs. Both families planned a monthly budget for all their expenses.

1. How much money did the Peterson Family spend on food on a monthly basis?

2. How much money did the Ashland Family spend on food on a monthly basis?

3. Which family put more money into savings each month? how much more?

4. Which family paid more money for shelter each month? how much more?

5. If the Peterson Family income increased by $50.00 per month and they kept the same percentages, then how much money would they spend on clothing?

6. If the Ashland Family income increased by $100 per month and they kept the same percentages, then how much money would they spend on other expenses?

7. What is the after-tax income of the Peterson Family for one year?

8. What is the yearly budget for the family car for the Ashland Family?

Mixed Review

9. $6.34 \quad 10. \quad .02 \overline{12.8}
   \quad - \quad 5.13
   \quad - \quad 33.83
   \quad + \quad 95.75

PW98 Practice
Add and Subtract Like Fractions

Find the sum or difference. Write it in simplest form.

1. \(\frac{5}{7} + \frac{1}{7}\)  
2. \(\frac{4}{9} + \frac{3}{9}\)  
3. \(\frac{4}{12} + \frac{8}{12}\)  
4. \(\frac{3}{11} + \frac{7}{11}\)

5. \(\frac{2}{8} + \frac{4}{8}\)  
6. \(\frac{7}{15} + \frac{4}{15}\)  
7. \(\frac{5}{9} + \frac{1}{9}\)  
8. \(\frac{1}{4} + \frac{2}{4}\)

9. \(\frac{4}{7} - \frac{2}{7}\)  
10. \(\frac{3}{5} - \frac{1}{5}\)  
11. \(\frac{6}{12} - \frac{2}{12}\)  
12. \(\frac{3}{4} - \frac{2}{4}\)

13. \(\frac{7}{9} - \frac{2}{9}\)  
14. \(\frac{4}{6} - \frac{1}{6}\)  
15. \(\frac{3}{8} - \frac{2}{8}\)  
16. \(\frac{9}{10} - \frac{5}{10}\)

17. George ran \(\frac{3}{8}\) mile on Sunday and \(\frac{2}{8}\) mile on Monday. How much farther did George run on Sunday than on Monday?

18. Lona pulled the wagon for \(\frac{4}{10}\) hour. Eric pulled the wagon for \(\frac{1}{10}\) hour. For how long did they pull the wagon in all?

Mixed Review

19. \(396 \times 54\)  
20. \(603,421 - 82,798\)  
21. \(1.62 \times 66\)

22. \(0.26 \times 0.29\)  
23. \(27 \div 28.35\)  
24. \(18 \div 1,368\)
Add Unlike Fractions

Use fraction bars to find the sum.

1. \[ \frac{1}{3} \quad \frac{1}{3} \quad \frac{1}{6} \]

2. \[ \frac{1}{4} \quad \frac{1}{4} \quad \frac{1}{8} \quad \frac{1}{8} \quad \frac{1}{8} \]

3. \[ \frac{1}{3} \quad \frac{1}{3} \quad \frac{1}{4} \]

4. \[ \frac{1}{2} \quad \frac{1}{5} \]

5. \[ \frac{1}{12} \quad \frac{1}{12} \quad \frac{1}{12} \quad \frac{1}{3} \]

6. \[ \frac{1}{10} \quad \frac{1}{10} \quad \frac{1}{10} \quad \frac{1}{5} \]

7. \[ \frac{1}{3} + \frac{1}{6} \]

8. \[ \frac{5}{8} + \frac{1}{4} \]

9. \[ \frac{3}{4} + \frac{1}{6} \]

10. \[ \frac{7}{10} + \frac{1}{5} \]

11. \[ \frac{4}{10} + \frac{1}{5} \]

12. \[ \frac{1}{5} + \frac{7}{10} \]

Mixed Review

13. \[ \frac{1}{4} + \frac{4}{9} \]

14. \[ \frac{7}{16} - \frac{3}{16} \]

15. \[ \frac{3}{8} + \frac{3}{8} \]

16. \[ \frac{9}{12} - \frac{4}{12} \]

17. \[ \frac{4,913}{16} \]

18. \[ \frac{56,794}{21,879} \]

19. \[ 0.84 \]

20. \[ \frac{7}{869.68} \]

21. \[ \frac{77.4}{1.8} \]

22. \[ \frac{150,631}{49,495} \]

23. \[ 39.6 \]

24. \[ 19.99 \]

\[ + 6.51 \]
Subtract Unlike Fractions

Use fraction bars to find the difference.

1. \[ \frac{1}{2} \]

2. \[ \frac{1}{3} \]

3. \[ \frac{1}{4} \]

4. \[ \frac{1}{5} \]

5. \[ \frac{1}{6} \]

6. \[ \frac{1}{7} \]

7. \[ \frac{4}{5} - \frac{3}{10} \]

8. \[ \frac{4}{6} - \frac{5}{12} \]

9. \[ \frac{5}{6} - \frac{5}{12} \]

10. \[ \frac{1}{2} - \frac{4}{10} \]

11. \[ \frac{6}{8} - \frac{1}{2} \]

12. \[ \frac{2}{3} - \frac{3}{6} \]

13. \[ \frac{1}{2} - \frac{1}{8} \]

14. \[ \frac{9}{12} - \frac{2}{3} \]

15. \[ \frac{4}{6} - \frac{1}{12} \]

16. \[ \frac{7}{8} - \frac{1}{4} \]

17. \[ \frac{11}{12} - \frac{1}{3} \]

18. \[ \frac{4}{6} - \frac{1}{2} \]

Mixed Review

19. \[ \$936.42 \times 13 \]

20. \[ 5 \div 11,045 \]

21. \[ 1.372 \times 1.3 \]

22. \[ 9 \div 48.6 \]

23. \[ 12 \times 6 \]

24. \[ 12 \times 11 \]

25. \[ 12 \times 10 \]

26. \[ 12 \times 9 \]
Estimate Sums and Differences

Write whether the fraction is closest to 0, $\frac{1}{2}$, or 1.

1. $\frac{4}{10}$
2. $\frac{11}{12}$
3. $\frac{2}{10}$
4. $\frac{7}{12}$
5. $\frac{7}{8}$
6. $\frac{3}{8}$
7. $\frac{2}{9}$
8. $\frac{1}{8}$

Estimate each sum or difference.

9. $\frac{1}{2} + \frac{3}{4}$
10. $\frac{1}{2} + \frac{5}{8}$
11. $\frac{1}{4} + \frac{5}{9}$
12. $\frac{6}{8} + \frac{2}{4}$

13. $\frac{11}{12} - \frac{1}{9}$
14. $\frac{5}{6} - \frac{3}{5}$
15. $\frac{8}{9} - \frac{3}{4}$
16. $\frac{7}{9} - \frac{5}{8}$

Estimate to compare. Write $<$, or $>$ in each $\bigcirc$.

17. $\frac{5}{8} + \frac{2}{8} \bigcirc \frac{1}{5} + \frac{2}{5}$
18. $\frac{6}{7} - \frac{3}{8} \bigcirc \frac{7}{9} - \frac{3}{4}$
19. $\frac{6}{9} + \frac{3}{5} \bigcirc \frac{7}{8} + \frac{3}{5}$
20. $\frac{5}{6} - \frac{1}{4} \bigcirc \frac{3}{6} - \frac{1}{3}$

Mixed Review

21. $\frac{14}{37.38}$
22. $\frac{56.789}{17}$
23. $\frac{76.18}{204}$
24. $0.07\overline{3.0086}$
Use Least Common Denominators

Name the LCD. Then add or subtract.
1. \( \frac{1}{4} - \frac{3}{4} \)  
2. \( \frac{2}{3} + \frac{3}{4} \)  
3. \( \frac{9}{10} - \frac{2}{5} \)  
4. \( \frac{3}{4} - \frac{2}{5} \)

Find the sum or difference.
5. \( \frac{1}{9} + \frac{2}{3} \)  
6. \( \frac{6}{8} - \frac{1}{2} \)  
7. \( \frac{3}{4} - \frac{5}{16} \)  
8. \( \frac{3}{5} - \frac{3}{10} \)

Find the value of \( n \).
13. \( \frac{3}{4} + n = 1 \)  
14. \( \frac{7}{8} - n = \frac{3}{8} \)  
15. \( \frac{3}{10} + n = \frac{7}{10} \)  
16. \( n - \frac{3}{5} = \frac{1}{2} \)

Mixed Review

Name the least common multiple (LCM).
21. 6 and 8  
22. 2 and 7  
23. 3 and 9

Solve.
24. \( 1,328 \div 83 \)  
25. \( 257,769 + 44,883 \)  
26. \( 42,789 \times 56 \)
Add and Subtract Unlike Fractions

Find the LCD. Then add or subtract.

1. $\frac{1}{2} + \frac{2}{8}$
2. $\frac{2}{5} + \frac{1}{3}$
3. $\frac{6}{8} + \frac{1}{4}$
4. $\frac{9}{12} - \frac{2}{4}$

Find the sum or difference. Write the answer in simplest form.

5. $\frac{8}{16} - \frac{2}{8}$
6. $\frac{2}{10} + \frac{3}{5}$
7. $\frac{7}{9} - \frac{1}{3}$
8. $\frac{4}{15} + \frac{2}{3}$

9. $\frac{3}{8} - \frac{1}{4}$
10. $\frac{6}{12} - \frac{2}{6}$
11. $\frac{9}{10} - \frac{4}{5}$
12. $\frac{6}{8} - \frac{1}{2}$

13. $\frac{5}{8} + \frac{5}{16}$
14. $\frac{4}{5} + \frac{1}{10}$
15. $\frac{5}{9} - \frac{7}{18}$
16. $\frac{1}{2} - \frac{3}{14}$

17. $\frac{2}{20} + \frac{4}{5}$
18. $\frac{1}{3} - \frac{2}{9}$
19. $\frac{2}{6} - \frac{5}{18}$
20. $\frac{3}{8} + \frac{2}{4}$

Mixed Review

21. Jade swam $\frac{1}{2}$ mile on Monday. On Wednesday she swam $\frac{3}{8}$ mile. How many miles did Jade swim in all?

22. Monty spent $\frac{4}{5}$ hour mowing his lawn. Then he spent $\frac{2}{10}$ hour mowing his neighbor’s lawn. How much longer did it take Monty to mow his lawn than his neighbor’s lawn?

23. $14 \div 39.9$
24. $367,112 \times 60$
25. $\frac{1}{4} + \frac{3}{4}$
26. $36.725 - 14.294$

PW104 Practice
Problem Solving Strategy

Work Backward

Work backward to solve.

1. Jerry’s kitten is 19 cm tall and is 6 months old. The kitten grew 2 cm between the ages of 5 months and 6 months. It grew 3 cm between the ages of 4 months and 5 months. How tall was Jerry’s kitten when it was 4 months old?

2. Denise went shopping at the mall. She spent $11.35 on a new T-shirt and $2.25 for hair ribbons. Lunch cost $4.50, and a drink cost $1.25. She came home with $10.65. How much money did Denise have before she went to the mall?

3. Kirk grew a crystal in science class. On Monday it was \( \frac{13}{16} \) inch tall. It had grown \( \frac{1}{4} \) inch between Friday and Monday. It had grown \( \frac{1}{2} \) inch between Tuesday and Friday. How tall was Kirk’s crystal on Tuesday?

4. Terry planted a gladiolus bulb. On Wednesday it was \( \frac{7}{8} \) inch tall. It had grown \( \frac{1}{4} \) inch between Tuesday and Wednesday. It had grown \( \frac{3}{8} \) inch between Monday and Tuesday. How tall was Terry’s gladiolus on Monday?

Mixed Review

Write the value of the 4 in each of these numbers.

5. 14,790.12   6. 0.4913   7. 499,765,315   8. 0.045

Solve.

9. 4.80
   6.62
   + 9.90

10. 17.59
   33.81
   + 67.08

11. 19,515
    7,563
    + 27,480

12. $15.99
    15.99
    + 15.99
Add Mixed Numbers

Find the sum in simplest form. Estimate to check.

1. \[ \frac{23}{8} + 3\frac{1}{4} = \frac{5}{4} \]
2. \[ \frac{4}{3} + 3\frac{1}{6} = \frac{2}{3} \]
3. \[ \frac{5}{12} + 2\frac{1}{6} = \frac{1}{4} \]
4. \[ \frac{3}{8} + 3\frac{3}{4} = \frac{3}{4} \]

5. \[ \frac{1}{10} + 4\frac{2}{5} = \frac{7}{5} \]
6. \[ \frac{3}{9} + 4\frac{1}{3} = \frac{1}{3} \]
7. \[ \frac{23}{5} + 5\frac{7}{10} = \frac{1}{3} \]
8. \[ \frac{4}{12} + 2\frac{1}{3} = \frac{1}{3} \]

Find the value of \( n \).

9. \[ \frac{7}{3} + n = 9\frac{1}{12} \]
10. \[ n + 5\frac{3}{10} = 8\frac{1}{10} \]
11. \[ \frac{3}{4} + 3\frac{7}{8} = n \]
12. \[ 2\frac{2}{3} + n = 6\frac{5}{6} \]
13. \[ n + 3\frac{5}{6} = 5\frac{1}{3} \]
14. \[ n + n = 8\frac{1}{2} \]
15. \[ 5\frac{5}{12} + 2\frac{1}{6} = n \]
16. \[ 8\frac{2}{9} + n = 9\frac{5}{9} \]

Mixed Review

17. Tim and Ralph are making a tower. They each built a separate section. Tim’s section was \( \frac{7}{8} \) foot tall, and Ralph’s section was \( \frac{8}{12} \) foot tall. How tall will the tower be when they join the sections?

18. Harriet and Felicia worked for the local charity. Harriet worked 5 hours, and Felicia worked 3 hours more than Harriet. How many hours did the girls work together for the charity?

19. \[ 21.376 + 9.653 \]
20. \[ 145.637 - 18.910 \]

21. \( 10 + (6 - n) \) if \( n = 3 \)
22. \( 5(3 \times 7) = n \)
**Subtract Mixed Numbers**

Find the difference in simplest form. Estimate to check.

1. \(\frac{37}{10} - 1\frac{2}{5}\)  
2. \(\frac{53}{4} - 2\frac{1}{8}\)  
3. \(\frac{85}{6} - 2\frac{1}{12}\)  

4. \(\frac{71}{2} - 4\frac{1}{6}\)  
5. \(\frac{99}{10} - 4\frac{3}{5}\)  
6. \(\frac{54}{9} - 3\frac{1}{3}\)  

Find the value of \(n\).

7. \(\frac{73}{8} - n = \frac{51}{8}\)  
8. \(\frac{54}{5} - 3\frac{n}{5} = 2\frac{1}{5}\)  
9. \(n - 2\frac{1}{4} = 1\frac{1}{6}\)  
10. \(\frac{57}{12} - 3\frac{6}{n} = 2\frac{1}{12}\)  
11. \(\frac{95}{6} - n = 5\frac{1}{6}\)  
12. \(4\frac{7}{8} - 2\frac{3}{4} = n\)  
13. \(6\frac{3}{4} - 4\frac{n}{4} = 2\frac{1}{2}\)  
14. \(3\frac{6}{8} - 2\frac{5}{n} = 1\frac{1}{8}\)  

**Mixed Review**

15. Sam made the chart at the right to keep track of how much wood he had for projects. He forgot to enter some of the numbers. Complete the table.

<table>
<thead>
<tr>
<th>Type of Wood</th>
<th>Started With</th>
<th>Feet Used</th>
<th>Feet Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oak</td>
<td>15(\frac{1}{2})</td>
<td>9(\frac{1}{4})</td>
<td>_____</td>
</tr>
<tr>
<td>Pine</td>
<td>22(\frac{5}{8})</td>
<td>_____</td>
<td>10(\frac{1}{4})</td>
</tr>
<tr>
<td>Maple</td>
<td>_____</td>
<td>12(\frac{3}{4})</td>
<td>2(\frac{1}{6})</td>
</tr>
<tr>
<td>Cherry</td>
<td>20(\frac{3}{4})</td>
<td>5(\frac{3}{8})</td>
<td>_____</td>
</tr>
</tbody>
</table>

16. Each week Sam will work 3\(\frac{1}{2}\) hours on Wednesday and 4\(\frac{1}{4}\) hours on Friday. How many hours will he work each week?
Subtraction With Renaming

Use fraction bars to find the difference.

1. \[ \frac{3}{2} \] 2. \[ \frac{7}{4} \] 3. \[ \frac{4}{10} \] 4. \[ \frac{6}{3} \]
   \[ - \frac{1}{6} \] \[ -\frac{3}{8} \] \[ -\frac{4}{5} \] \[ -\frac{5}{6} \]

5. \[ \frac{8}{2} \] 6. \[ \frac{3}{8} \] 7. \[ \frac{7}{10} \] 8. \[ \frac{10}{8} \]
   \[ -\frac{1}{6} \] \[ -\frac{1}{2} \] \[ -\frac{2}{5} \] \[ -\frac{3}{4} \]

9. \[ \frac{6}{12} \] \[ -\frac{2}{3} \]
10. \[ \frac{4}{5} \] \[ -\frac{7}{10} \]

11. \[ \frac{5}{8} \] \[ -\frac{3}{4} \]
12. \[ \frac{5}{2} \] \[ -\frac{7}{12} \]

13. \[ \frac{8}{6} \] \[ -\frac{5}{12} \]
14. \[ \frac{7}{4} \] \[ -\frac{6}{12} \]

Mixed Review

15. Stacey had \[ \frac{3}{4} \] cakes for her party. She had \[ \frac{1}{8} \] of a cake left after the party. How much cake was eaten at her party?

16. Martha spent \[ 2\frac{1}{2} \] hours reading on Saturday. She spent \[ \frac{3}{4} \] of an hour reading on Sunday. How many hours did she spend reading this weekend?

17. \[ 0.3 \) \[ 144.9 \]
18. \[ 76,592 \] \[ \times \] \[ 104 \]
19. \[ n \times 468 = 7,020 \]

20. \[ \frac{6}{9} - \frac{1}{3} = \]
21. \[ \frac{256,719}{0.3} \]
22. \[ \frac{7}{12} - \frac{3}{12} = \]
23. \[ 12 \) \[ 543.6 \]
Practice with Mixed Numbers

Add or subtract. Write the answer in simplest form. Estimate to check.

1. \[3\frac{1}{4} \quad 2. \quad 2\frac{1}{2} \quad 3. \quad 5\frac{7}{12} \quad 4. \quad 5\frac{3}{8}
   \]
   \[-2\frac{7}{8} \quad -1\frac{3}{5} \quad +3\frac{1}{8} \quad -1\frac{5}{16}\n
5. \[8\frac{9}{10} \quad 6. \quad 9\frac{2}{8} \quad 7. \quad 6\frac{4}{9} \quad 8. \quad 6\frac{2}{3}
   \]
   \[-5\frac{1}{5} \quad +3\frac{5}{12} \quad +10\frac{3}{18} \quad -2\frac{1}{12}\n
9. \[7\frac{2}{3} \quad 10. \quad 8\frac{5}{9} \quad 11. \quad 5\frac{5}{12} \quad 12. \quad 12\frac{1}{2}
   \]
   \[+1\frac{5}{12} \quad -3\frac{1}{3} \quad +2\frac{1}{6} \quad -4\frac{1}{3}\n
Find the value of \(n\).

13. \[3\frac{1}{4} + n = 7\frac{1}{8} \]
   14. \[6\frac{5}{6} - n = 2\frac{2}{3} \]
15. \[9\frac{5}{9} - n = 8\frac{2}{9} \]
   16. \[n + 4\frac{2}{3} = 8\frac{1}{2} \]

Mixed Review

17. Write \(\frac{7}{8}\) as a decimal. \[\quad \]
   18. \[3.78 + n = 8.37 \]
19. \[0.7 \overline{6.58} \]
   20. \[\frac{1}{5} + \frac{4}{5} \]
21. Find the greatest common factor of 36 and 60.
22. Find the least common multiple of 8 and 10.
Problem Solving Skill

Multistep Problems

1. Emily used wallpaper border to outline her window. She used $6\frac{1}{3}$ yards to outline the door and $1\frac{5}{6}$ yards to outline a shelf. She used $9\frac{1}{2}$ yards of border in all. How much border did she use for the window?

2. On Friday Jake had done a total of 125 push-ups in five days. He did 20 on Monday, 30 on Tuesday, 15 on Wednesday, and 20 on Thursday. How many push-ups did he do on Friday?

3. Dirk spent $3\frac{3}{4}$ hours outside on Saturday. During that time he spent $1\frac{1}{2}$ hours at the park and $1\frac{3}{4}$ hours in a friend’s yard. He also rode his bicycle. How much time did he spend riding his bicycle?

4. Terry saved $60 to spend on a party for her mother. She spent $25 for a cake and $12 for party decorations. She spent the rest on a gift. How much did she spend on the gift?

5. Marlinda bought 32 inches of butcher paper for her project. She used $15\frac{1}{4}$ inches for the background. How much butcher paper did she have left?

6. Ingrid planted a garden. In the garden $\frac{1}{2}$ of the rows are tomatoes, $\frac{1}{4}$ of the rows are green beans, and $\frac{2}{8}$ of the rows are lettuce. She has 20 rows in all. How many rows of each vegetable are there?

Mixed Review

Solve.

5. Marilinda bought 32 inches of butcher paper for her project. She used $15\frac{1}{4}$ inches for the background. How much butcher paper did she have left?

6. Ingrid planted a garden. In the garden $\frac{1}{2}$ of the rows are tomatoes, $\frac{1}{4}$ of the rows are green beans, and $\frac{2}{8}$ of the rows are lettuce. She has 20 rows in all. How many rows of each vegetable are there?

Rename each fraction as a mixed number.

20. $\frac{13}{5} = \underline{2}\underline{1}$

21. $\frac{26}{12} = \underline{2}\underline{2}$

22. $\frac{19}{2} = \underline{9}\underline{1}$

23. $\frac{15}{4} = \underline{3}\underline{3}$
Multiply Fractions and Whole Numbers

Write the number sentence each model represents.

1. \[ \ \]
2. \[ \ \]
3. \[ \ \]
4. \[ \ \]
5. \[ \ \]
6. \[ \ \]
7. \[ \ \]
8. \[ \ \]
9. \[ \ \]
10. \[ \ \]

Find the product.

11. \( \frac{1}{6} \times 18 = \) ______
12. \( \frac{1}{7} \times 21 = \) ______
13. \( \frac{1}{4} \times 16 = \) ______
14. \( \frac{3}{8} \times 24 = \) ______
15. \( \frac{2}{7} \times 14 = \) ______
16. \( \frac{5}{8} \times 24 = \) ______
17. \( 12 \times \frac{3}{4} = \) ______
18. \( 24 \times \frac{5}{6} = \) ______
19. \( 18 \times \frac{7}{9} = \) ______

Mixed Review

20. Write \( \frac{75}{100} \) in simplest form.

21. Round 65.0798 to the nearest tenth.

22. \( 6.571 + 3.1 \)

23. \( 17.012 - 5.1 \)
Multiply a Fraction by a Fraction

Find the product. Write it in simplest form.

1. \(\frac{1}{3} \times \frac{1}{5}\)  
2. \(\frac{2}{5} \times \frac{1}{4}\)  
3. \(\frac{2}{3} \times \frac{1}{2}\)  
4. \(\frac{5}{6} \times \frac{2}{3}\)

5. \(\frac{1}{6} \times \frac{1}{3}\)  
6. \(\frac{2}{3} \times \frac{3}{5}\)  
7. \(\frac{1}{4} \times \frac{2}{7}\)  
8. \(\frac{4}{5} \times \frac{3}{8}\)

9. \(\frac{1}{6} \times \frac{7}{8}\)  
10. \(\frac{3}{7} \times \frac{5}{8}\)  
11. \(\frac{11}{12} \times \frac{4}{9}\)  
12. \(\frac{7}{9} \times \frac{5}{6}\)

Write the number sentence each model represents.

13.  
14.  
15.  

Mixed Review

16. \(348.9 \times 7.7\)  
17. \(534.26 \times 3.4\)  
18. \(5,458,679 - 3,817,382\)  
19. \(7.8747 \div 0.9912\)

20. \(6 \div 432.6\)  
21. \(195 \div 17,643.6\)  
22. \(2.72 \div 0.056032\)
Multiply Fractions and Mixed Numbers

Draw fraction squares to help you find the product.

1. \( \frac{2}{5} \times 1\frac{1}{3} \)
2. \( \frac{2}{3} \times 2\frac{1}{4} \)
3. \( \frac{3}{4} \times 3\frac{2}{3} \)

4. \( \frac{1}{3} \times 2\frac{1}{4} \)
5. \( \frac{1}{6} \times 3\frac{1}{2} \)
6. \( \frac{2}{3} \times 1\frac{1}{2} \)

7. \( \frac{5}{6} \times 1\frac{2}{3} \)
8. \( \frac{3}{4} \times 2\frac{4}{5} \)
9. \( \frac{1}{3} \times 3\frac{2}{5} \)

10. \( \frac{2}{3} \times 2\frac{2}{3} \)
11. \( \frac{1}{2} \times 3\frac{5}{6} \)
12. \( \frac{3}{5} \times 1\frac{3}{4} \)

Mixed Review

13. \( 956,346 \) \(- 218,675 \)
14. \( 534,127 \) \(- 5,621 \)
15. \( 836,142 \) \(- 1,986 \)
16. \( 72,839 \) \(+ 45,615 \)

17. \( 2,586.50 \) \(+ 1,475.61 \)
18. \( 3,451.04 \) \(+ 2,194.60 \)
19. \( 4,536.70 \) \(+ 2,549.31 \)
20. \( 35.4849 \) \(- 32.0792 \)
Multiply with Mixed Numbers

Complete each problem. Show how to simplify before you multiply.

1. \(3\frac{1}{2} \times 2\frac{2}{7}\)
2. \(1\frac{1}{5} \times 3\frac{3}{4}\)
3. \(1\frac{1}{4} \times 1\frac{1}{3}\)
4. \(3\frac{1}{3} \times 2\frac{1}{4}\)
5. \(1\frac{1}{4} \times 1\frac{1}{5}\)
6. \(2\frac{2}{7} \times 1\frac{1}{6}\)

Multiply. Write the answer in simplest form.

7. \(\frac{1}{2} \times 25\)
8. \(1\frac{1}{4} \times \frac{3}{4}\)
9. \(3\frac{1}{2} \times 5\frac{1}{2}\)
10. \(\frac{3}{6} \times 12\)
11. \(3\frac{1}{4} \times \frac{1}{6} \times \frac{2}{3}\)
12. \(1\frac{1}{5} \times \frac{1}{4} \times 2\frac{1}{2}\)

Find the missing digit.

13. \(\frac{1}{3} \times \frac{n}{8} = \frac{5}{24}\)
14. \(3 \times \frac{2}{n} = \frac{6}{7}\)
15. \(2\frac{n}{6} \times \frac{1}{8} = \frac{13}{48}\)

Mixed Review

16. \(326 \times 12\)
17. \(475 \times 38\)
18. \(396 \times 7\)
19. \(491 \times 67\)

Add \(\frac{2}{5}\) to each number.

20. \(\frac{3}{5}\)
21. \(\frac{7}{5}\)
22. \(\frac{8}{10}\)
23. \(\frac{9}{2}\)
24. \(\frac{21}{5}\)
25. \(2.4\)
Problem Solving Skill

Sequence and Prioritize Information

Sequence and prioritize information to solve.

1. Julie took $100.00 to the store. She spent $15.00 on fruit, three times that much on meat, and $24.45 less on vegetables than she spent on meat. How much change did Julie have?

2. Mrs. Brown's Girl Scout troop had a car wash to earn some funds. They saved \( \frac{1}{6} \) of the money. They used \( \frac{1}{2} \) of the remaining money to go horseback riding. They then had $100.00 left. How much did they initially make washing cars?

3. The school's track team ran the 220 relay in 7 minutes 46 seconds at their first track meet. The next meet, their time was 42 seconds shorter. At the next, their improvement was twice as fast. What was their total running time at the last meet?

4. Sam's birthday is 186 days after Jim's birthday. Susan's is 42 days before Sam's and 24 days after Jim's. Sam was born on September 6th. What day was Susan born on if it wasn't a leap year?

Mixed Review

5. \( \times \frac{2.35}{7} \)
6. \( \times \frac{8.64}{3} \)
7. \( \times \frac{4.05}{6} \)
8. \( \times \frac{6.42}{8} \)

9. \( \frac{6.34}{-0.09} \)
10. \( \frac{8.36}{+2.95} \)
11. \( \frac{1.07}{-0.09} \)
12. \( \frac{5.9}{-0.16} \)

Write the least common multiple (LCM).

13. 6 and 12
14. 7 and 20
15. 4 and 19
Divide Fractions
Write a number sentence for each model.

1. \[
\begin{array}{cccccccc}
\frac{1}{8} & \frac{1}{8} & \frac{1}{8} & \frac{1}{8} & \frac{1}{8} & \frac{1}{8} & \frac{1}{8} & \frac{1}{8} \\
\frac{1}{8} & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow \\
\end{array}
\]

2. \[
\begin{array}{cccccccc}
\frac{1}{4} & \frac{1}{4} & \frac{1}{4} & \frac{1}{4} & \frac{1}{4} & \frac{1}{4} & \frac{1}{4} & \frac{1}{4} \\
\frac{1}{10} & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow \\
\end{array}
\]

3. \[
\begin{array}{cccccccc}
\frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \\
\frac{1}{10} & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow \\
\end{array}
\]

Use fraction bars to find the quotient.

4. \[
\frac{8}{10} \div \frac{2}{5} = \]

5. \[
\frac{7}{8} \div \frac{1}{8} = \]

6. \[
3 \div \frac{1}{3} = \]

7. \[
2 \div \frac{1}{2} = \]

8. \[
\frac{9}{10} \div \frac{3}{10} = \]

9. \[
2 \div \frac{2}{5} = \]

10. \[
\frac{2}{3} \div \frac{2}{9} = \]

11. \[
\frac{2}{5} \div \frac{2}{10} = \]

12. \[
\frac{5}{7} \div \frac{1}{7} = \]

Mixed Review

13. Write two fractions equivalent to \(\frac{5}{8}\).

14. \(\frac{3}{8} + \frac{1}{4}\)

15. \(\frac{5^3}{4} - \frac{12}{3}\)
Reciprocals

Are the two numbers reciprocals? Write yes or no.

1. \(\frac{3}{3}\) and \(\frac{3}{10}\)  
2. \(\frac{1}{2}\) and \(\frac{1}{2}\)  
3. \(\frac{3}{4}\) and 4  
4. 12 and \(\frac{1}{12}\)  

Write the reciprocal of each number.

5. \(\frac{9}{2}\)  
6. 15  
7. \(\frac{2}{3}\)  
8. \(\frac{1}{10}\)  
9. \(\frac{3}{5}\)  

Find the value of \(n\).

15. \(\frac{2}{n} \times \frac{5}{2} = 1\)  
16. \(3 \times \frac{n}{3} = 1\)  
17. \(\frac{1}{2} \times \frac{n}{3} = 1\)  
18. \(n \times \frac{1}{9} = 1\)  

Multiply. Use the Associative and Commutative Properties of Multiplication to help you.

19. \(\frac{4}{7} \times \frac{3}{8} \times \frac{7}{4}\)  
20. \(5 \times \frac{2}{3} \times \frac{1}{5} \times 12\)  
21. \(\frac{3}{7} \times \frac{1}{8} \times 12 \times \frac{7}{3}\)  

Mixed Review

Find the sum or difference. Write it in simplest form.

22. \(\frac{7}{9} - \frac{5}{9}\)  
23. \(\frac{3}{5} + \frac{1}{6}\)  
24. \(1\frac{3}{8} + 2\frac{5}{8}\)  
25. \(5\frac{9}{10} - 3\frac{1}{3}\)  

Divide.

26. \(0.3)72.417\)  
27. \(28)4,319\)  
28. \(2.71)1.7615\)  
29. \(4,611)7,715\)
Divide Whole Numbers by Fractions

Use fraction bars, patterns, or reciprocals to divide.

1. \(3 \div \frac{1}{2}\)  
2. \(3 \div \frac{3}{8}\)  
3. \(2 \div \frac{4}{10}\)  
4. \(2 \div \frac{1}{4}\)

Divide.

5. \(8 \div \frac{4}{5}\)  
6. \(3 \div \frac{2}{3}\)  
7. \(10 \div \frac{5}{7}\)  
8. \(5 \div \frac{3}{8}\)

Find the missing number.

13. \(7 \div \frac{6}{7} = \) \[\_\_\_\_\_\_\_\_\_\]
14. \[\_\_\_\_\_\_\_\_\_\] \(\div \frac{3}{4} = 6\)
15. \(3 \div \frac{9}{9} = \frac{52}{5}\)

16. How many three-fourths are in 12? \[\_\_\_\_\_\_\_\_\_\]
17. How many two-sevenths are in 2? \[\_\_\_\_\_\_\_\_\_\]
18. How many one-fourths are in 9? \[\_\_\_\_\_\_\_\_\_\]

Mixed Review

Find the sum or difference. Write it in simplest form.

19. \(\frac{1}{9} + \frac{5}{9}\)  
20. \(\frac{3}{4} - \frac{1}{6}\)  
21. \(3\frac{5}{7} - 2\frac{4}{7}\)  
22. \(4\frac{2}{3} + \frac{5}{9}\)

Write each fraction as a decimal.

23. \(\frac{7}{50}\)  
24. \(\frac{19}{25}\)  
25. \(\frac{49}{125}\)  
26. \(\frac{390}{400}\)
Divide Fractions

Write a division sentence for each model.

1. \[ \frac{1}{9} \div \frac{1}{9} \]
   \[ \frac{1}{9} \rightarrow \rightarrow \]

2. \[ \frac{1}{4} \div \frac{1}{4} \]
   \[ \frac{1}{8} \rightarrow \rightarrow \rightarrow \rightarrow \]

3. \[ \frac{1}{2} \div \frac{1}{2} \]
   \[ \frac{1}{6} \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow \]

Use reciprocals to write a multiplication problem for each division problem.

4. \[ \frac{5}{8} \div \frac{1}{4} \]
   \[ \frac{7}{9} \div \frac{1}{9} \]

5. \[ \frac{7}{10} \div \frac{1}{5} \]

6. \[ \frac{4}{5} \div 2 \]

Divide. Write the answer in simplest form.

8. \[ \frac{4}{5} \div \frac{8}{15} \]

9. \[ \frac{7}{10} \div \frac{1}{2} \]

10. \[ \frac{5}{6} \div \frac{1}{2} \]

11. \[ \frac{6}{15} \div \frac{1}{5} \]

12. \[ \frac{1}{6} \div \frac{2}{3} \]

13. \[ \frac{7}{9} \div \frac{2}{3} \]

14. \[ \frac{9}{10} \div \frac{2}{5} \]

15. \[ \frac{9}{20} \div \frac{3}{4} \]

16. \[ \frac{5}{8} \div \frac{5}{16} \]

17. \[ \frac{5}{6} \div \frac{2}{3} \]

18. \[ \frac{12}{21} \div \frac{4}{7} \]

19. \[ \frac{5}{8} \div \frac{3}{4} \]

Mixed Review

Write the common factors for each pair of numbers.

20. 30, 40

21. 18, 28

22. 12, 42

23. 15, 30

Write the greatest common factor for each pair of numbers.

24. 9, 18

25. 22, 24

26. 25, 30

27. 14, 49
Problem Solving Strategy

Solve a Simpler Problem

Use a simpler problem to solve.

The Robinsons drove for 4,000 miles during their vacation. This was $4/5$ the distance the Jones family drove during their vacation. The Edwards did not drive, but flew 6,000 miles to their vacation spot. The Bowie family traveled $1/2$ of the distance of the Edwards family.

1. What equation can you write to find $n$ if $n$ equals the number of miles the Jones family drove?

2. Look at Problem 1. What is a simpler equation you could write? How many miles did the Jones family drive?

3. How many miles did the Bowie family drive?

4. How many more miles did the Robinson family drive compared to the Bowie family?

Mixed Review

5. John started exercising at 4:30 P.M. and ended at 6:15 P.M. How long did he spend exercising?


   \[ 3,000 \div \frac{3}{4} \]

7. Solve.

   \[ 34,532 - 21,412 \]

8. Mary wants to put a border around her picture. The picture is 6 inches wide and 5 inches high. How much border does she need to go around the picture?
Integers

Write an integer to represent each situation.

1. 15 steps behind
   ________________

2. 10 days ahead of schedule
   ________________

3. a gain of 35 yards
   ________________

4. 14 days after school started
   ________________

5. 20 minutes until arrival time
   ________________

6. a $75.00 withdrawal from the bank
   ________________

Write the opposite of each integer.

7. \(-54\) ________
   \(-36\) ________

8. \(+3\) ________
   \(+14\) ________

9. \(-2\) ________
   \(+289\) ________

10. \(+3,540\) ________
    \(-2,560\) ________

Name each integer's absolute value.

11. \(|+36|\)

12. \(|-230|\)

13. \(|-1,003|\)

14. \(|+478|\)

15. \(|-29|\)

16. \(|+3,600|\)

17. \(|+496|\)

18. \(|-2|\)

19. \(|-29|\)

20. \(|+3,660|\)

21. \(|+496|\)

22. \(|-2|\)

Mixed Review

23. Identify the addition property shown. \(67 + 4 = 4 + 67\)

24. Find \(n\) and identify the multiplication property shown. \(134 \times n = 0\)

Solve.

25. \(76 \times 8,954 = n\)

26. \(3.66 \times 0.56 = n\)

27. \(34 \times n = 306\)

28. \(96 \div n = 8\)
Compare and Order Integers

Compare. Write <, >, or = in each □.

1. \( -17 \) □ \( -16 \)  
   2. \( -10 \) □ \( +3 \)  
   3. \( -5 \) □ \( -7 \)  
   4. \( +3 \) □ \( -5 \)

Draw a number line to order each set of integers from greatest to least.

5. \( +3, -4, -1, 0 \)  
6. \( +4, -2, +5, -1 \)

7. \( +10, +4, -9, +2 \)  
8. \( -7, +2, -6, +6 \)

Algebra Name the integer that is 1 less.

9. \( -5 \)  
10. \( +10 \)  
11. \( -13 \)  
12. \( +6 \)  
13. \( -7 \)

Algebra Name the integer that is 1 more.

14. 0  
15. \( -9 \)  
16. \( +8 \)  
17. \( -5 \)  
18. \( -1 \)

Mixed Review

Order the fractions from least to greatest.

19. \( \frac{1}{2}, \frac{1}{5}, \frac{3}{4} \)  
20. \( \frac{5}{6}, \frac{1}{3}, \frac{3}{8} \)

21. \( \frac{3}{4}, \frac{3}{6}, \frac{3}{5} \)  
22. \( \frac{2}{5}, \frac{1}{4}, \frac{2}{3} \)

Write the sum or difference.

23. \( 284.03 \)  
24. \( 137.7 \)  
25. \( 457.6 \)  
26. \( 637.09 \)

\[ \begin{align*} 
   &-192.91 &+23.62 &-18.78 &-138.17 
\end{align*} \]
Add Integers

Write the addition number sentence modeled.

1. \[
\begin{array}{cccccccc}
\hline
-4 & -3 & -2 & -1 & 0 & +1 & +2 & +3 & +4 \\
\hline
\end{array}
\]

Find each sum.

5. \[+7 + -3\] 6. \[-6 + -4\] 7. \[+10 + -3\] 8. \[-4 + -3\]

9. \[-7 + +2\] 10. \[-3 + -2\] 11. \[+8 + -8\] 12. \[-6 + 0\]

13. \[-6 + +8\] 14. \[-3 + +2 + -5\] 15. \[-4 + -3 + -5\] 16. \[+7 + -3 + -3\]

Reasoning  Without adding, tell whether the sum will be negative, positive, or zero.

17. \[+39 + -3\] 18. \[+3 + -20\] 19. \[+420 + -50\] 20. \[+352 + -352\]

21. \[-42 + +51\] 22. \[+36 + -36\] 23. \[+180 + -360\] 24. \[-95 + +95\]

Mixed Review

Round to the nearest hundred.

25. 651  26. 1,524  27. 12,345,542  28. 83,952

Round to the value of the underlined digit.

29. \[0.734\] 30. \[21.638\] 31. \[5.013\] 32. \[62.819\]
Subtract Integers
Use counters to find each difference.

1. $+7 - +3$
2. $-9 - +6$
3. $+7 - +6$
4. $-5 - +6$

5. $+10 - +1$
6. $-7 - +5$
7. $+8 - +4$
8. $-6 - +2$

9. $-8 - +2$
10. $+14 - +16$
11. $-4 - +4$
12. $+12 - +11$

Algebra Complete the addition sentence.

13. $-6 - +7 = -6 + □$
14. $-4 - +8 = -4 + □$

15. $-7 - +9 = -7 + □$
16. $+4 - +2 = +4 + □$

17. $-1 - +3 = -1 + □$
18. $+6 - +5 = +6 + □$

19. $+8 - +5 = +8 + □$
20. $-7 - +3 = -7 + □$

21. In Minnesota, the temperature was reported to be $6^\circ F$ at 6:00 a.m. After an expected cold front went through, the temperature was $-15^\circ F$. What was the change in temperature?

Mixed Review
Solve for $n$.

22. $11.975 - 1.993 = n$
23. $23 \times n = 92$
24. $\frac{1}{5} + n = \frac{3}{4}$

25. $\frac{1}{3} + \frac{n}{6} = \frac{5}{6}$
26. $81 \div n = 9$
27. $n + 0.74 = 0.86$
Subtract Integers

Draw a number line to find the difference.

1. \[ \begin{array}{c}
-6 & 3 \\
\end{array} \]

2. \[ \begin{array}{c}
+4 & +7 \\
\end{array} \]

3. \[ \begin{array}{c}
-1 & +8 \\
\end{array} \]

4. \[ \begin{array}{c}
+9 & +2 \\
\end{array} \]

Write the subtraction number sentence modeled.

5. \[ \begin{array}{c}
7 & 6 & 5 & 4 & 3 & 2 & 1 & 0 & +1 & +2 & +3 & +4 & +5 & +6 & +7 & +8 \\
\end{array} \]

6. \[ \begin{array}{c}
8 & 7 & 6 & 5 & 4 & 3 & 2 & 1 & 0 & +1 & +2 & +3 & +4 & +5 & +6 & +7 & +8 \\
\end{array} \]

Find each difference.

7. \[ +17 - +3 \]

8. \[ -8 - 0 \]

9. \[ -2 - +8 \]

10. \[ -9 - +7 \]

11. \[ +15 - +4 \]

12. \[ -6 - +7 \]

13. \[ +28 - +2 \]

14. \[ -7 - +5 \]

Algebra Complete the addition sentence.

15. \[ -7 - +4 = -7 + \_] 

16. \[ -3 - +6 = -3 + \_] 

17. \[ -2 - +5 = -2 + \_] 

18. \[ +1 - +8 = +1 + \_] 

Compare. Write <, >, or = in each \[ \_ \].

19. \[ -3 + -6 \_ -3 - +6 \]

20. \[ -2 - +1 \_ -9 + +4 \]

21. \[ -7 + +5 \_ -2 - +8 \]

22. \[ -3 - +6 \_ -7 + +5 \]

Mixed Review

Write as a decimal and as a fraction in simplest form.

23. \[ 25\% \_ \_ \_ \_ \_ \]

24. \[ 50\% \_ \_ \_ \_ \_ \]

25. \[ 20\% \_ \_ \_ \_ \_ \]
**Draw a Diagram**

Draw a diagram to solve.

1. Sandra opened a checking account with $200.00. She wrote a check for groceries for $95.00 and a check for clothes for $65.00. Later that week she withdrew $85.00. She balanced her checkbook and realized she had overdrawn her account. How much money did she have to take to the bank to cover her overdraft and maintain a minimum of $50.00 in the account?

2. John went scuba diving and dove to a depth of 30 ft. After a few minutes he realized he had ascended 5 ft. Then he noticed the coral at the bottom so he decided to descend 12 ft. Finally, he ascended 22 ft to feed the fish before returning to the surface. At what depth did he feed the fish?

3. Scott spent 8 hours driving to college. If his average speed was 55 mph, how many miles did Scott drive?

4. The ratio of coaches to players is 1 to 12. There are 9 coaches. How many players are there?

5. Mr. Downing went on a 100–day archaeological expedition. He traveled 15 of the days. What percent of the days did he not travel?

6. There were 63 people in a hotel. Then 7 checked out, and 3 times that number checked in. How many people are in the hotel now?

**Mixed Review**

For 7–12, write the decimal as a percent.

7. 0.05 ______

8. 0.29 ______

9. 0.98 ______

10. 0.14 ______

11. 0.75 ______

12. 0.33 ______
Graph Relationships

Write the ordered pairs. Then graph the ordered pairs.

1. \[
\begin{array}{c|ccccc}
\text{Input, } x & 10 & 15 & 20 & 25 \\
\text{Output, } y & 5 & 10 & 15 & 20 \\
\end{array}
\]

2. \[
\begin{array}{c|cccc}
\text{Input, } x & 6 & 7 & 8 & 9 \\
\text{Output, } y & 11 & 12 & 13 & 14 \\
\end{array}
\]

3. \[
\begin{array}{c|cccc}
\text{Input, } x & 10 & 9 & 8 & 7 \\
\text{Output, } y & 7 & 6 & 5 & 4 \\
\end{array}
\]

4. \[
\begin{array}{c|cccc}
\text{Input, } x & 2 & 3 & 4 & 5 \\
\text{Output, } y & 6 & 9 & 12 & 15 \\
\end{array}
\]

5. \[
\begin{array}{c|cccc}
\text{Length of Square’s Side, } x & 4 & 5 & 6 & 7 \\
\text{Perimeter, } y & 16 & 20 & 24 & 28 \\
\end{array}
\]

6. \[
\begin{array}{c|cccc}
\text{Number of Quarters, } x & 1 & 2 & 3 & 4 \\
\text{Number of Nickels, } y & 5 & 10 & 15 & 20 \\
\end{array}
\]

Use Data For 7–8, use the table.

<table>
<thead>
<tr>
<th>Tickets sold, } x</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money received, } y</td>
<td>$\text{4}$</td>
<td>$\text{8}$</td>
<td>$\text{12}$</td>
<td>$\text{16}$</td>
</tr>
</tbody>
</table>

7. Write the ordered pairs. Then graph the ordered pairs.

8. How can you use the graph to find the amount of money 5 tickets cost?

Mixed Review

9. If \( x = 22 \), what is the value of \((x + 48)\)?

10. \[45,679,231 + 12,382,938\]

11. Find the mode of the data set: 159, 156, 159, 166, 164, 162

12. Find the mean of the data set in problem 11.
Graph Integers on the Coordinate Plane

For 1–8, identify the ordered pair for each point.
1. Point A _______ 2. Point B _______
3. Point C _______ 4. Point D _______
5. Point E _______ 6. Point F _______
7. Point G _______ 8. Point H _______

Graph and label the ordered pairs on a coordinate plane.
9. A (0, +7) 10. B (+4, 0) 11. C (+2, +6)
15. G (+1, +6) 16. H (−5, +6) 17. J (+4, +6)

For 18–23, name the ordered pair that is described.
18. Start at the origin. Move 6 units to the left and 4 units up.
19. Start at the origin. Move 4 units to the right and 4 units down.
20. Start at the origin. Move 0 units to the right and 2 units up.
21. Start at the origin. Move 3 units to the left and 0 units down.
22. Start at the origin. Move 1 unit to the left and 5 units down.
23. Start at the origin. Move 2 units to the right and 3 units up.

Mixed Review

Solve.
24. $348 \times 25$ 25. $30.8 - 16.925$ 26. $7.000 \div 8$

27. $1\frac{3}{4} + 2\frac{3}{8}$ 28. $3\frac{1}{6} - 1\frac{2}{3}$ 29. $1.87 + 32.6 + 0.555$
Use an Equation to Graph

Use a rule to complete the table. Then write the equation.

1. Feet, $x$ 2 4 6 8
   Toes, $y$ 10 20 30

2. Grapes, $x$ 10 14 16 18
   Oranges, $y$ 6 10 12

3. Bikes, $x$ 3 4 5 6
   Wheels, $y$ 6 8 10

4. Triangles, $x$ 2 3 4 5
   Sides, $y$ 6 9 12

Use a rule to complete the table, write the ordered pairs, and then make a graph.

5. $x$ 5 4 3 2 1
   $y$ 3 2 1

6. $x$ 3 6 9 12 15
   $y$ 1 2 3

7. $x$ -6 -7 -8 -9 -10
   $y$ -2 -3 -4

8. $x$ -2 -3 -4 -5 -6
   $y$ -5 -6 -7

Use each equation to make a table with at least 4 ordered pairs. Then graph.

9. $y = x + 5$
10. $y = 3x - 2$
11. $y = 2x$
12. $y = -4 + x$
13. $y = x - 0$
14. $y = -5 + x$
15. $y = 3x$
16. $y = x - 6$

Mixed Review

17. $789,990 - 543,834 =$
18. $20.08 \times 324 =$
19. Round to the nearest ten thousand. 45,213,021
20. Find the range of the numbers. 12, 42, 24, 53, 12, 17, 34
Problem Solving Skill: Relevant or Irrelevant Information

For 1–2, use the map. Tell the relevant information and solve.

1. The park and the stadium have the same y-coordinate. The x-coordinate of the park is 2 less than the police station’s y-coordinate. The firehouse is 6 units right and 4 units down from the park. Where is the park?

2. The soccer field was built before the stadium. It is south of the park and east of the stadium. If you go 3 units west of the police station, you will find the soccer field. Where is the soccer field?

Lara skated to the playground which is 3 blocks north of her house. Then she turned west and skated 4 blocks to her friend’s house. Before going home, she stopped at the store which is 3 blocks south of her friend’s house. She then returned home. How many blocks did she skate?

3. Which information is relevant to solving the problem?
   A  Lara skated to the playground.
   B  Her friend lives west of the playground.
   C  The store is 3 blocks south of Lara’s friend’s house.
   D  The playground is north of Lara’s house.

4. Which question cannot be answered with the given information.
   F  Where does Lara live?
   G  In which direction did Lara travel home from the store?
   H  Could Lara have taken a shorter route?
   J  How far is the playground from the store?

Mixed Review

5. In the number 268,743, how many times greater than the 3 is the 6?

6. Write the next 4 letters in this sequence: A, B, Z, Y, C, D, . . .
Lines and Angles

For 1–5, use the figure at the right. Name an example of each term.

1. Angle

2. Acute Angle

3. Obtuse Angle

4. Point

5. Line Segment

Draw and label a figure for each.

6. \(AB\)  
7. Point C  
8. \(BG\)

For 9–11, use the figure.

9. Name a line segment parallel to \(AB\).

10. Name a line segment that intersects \(DA\).

11. Name two line segments that are not parallel.

Mixed Review

12. Solve for \(n\).

\[
\frac{600}{n} = 20
\]

13. What is \(\frac{1}{3}\) of 270?
Measure and Draw Angles

1. The unit used to measure an angle is called a ________________.

2. A ________________ is a tool for measuring the size of the opening of an angle.

Use a protractor to measure and classify each angle.

3. 

4. 

5. 

6. 

7. 

8. 

Mixed Review

Solve.

9. $55 \div 555,555$  
10. $2^8$  
11. $3^5$  
12. $3^4 \cdot 4,527$

13. $325 \times 12$  
14. $673 \times 25$  
15. $518 \times 42$  
16. $236 \times 18$  
17. $639 \times 48$
Angles and Polygons

1. A _______ is a closed plane figure formed by three or more line segments.

2. If all the sides have equal length and the angles measure the same, the figure is a _______.

Name each polygon and tell if it is regular or not regular.

3. ____________

4. ____________

5. ____________

6. ____________

Use dot paper to draw an example of each.

7. regular hexagon

8. regular quadrilateral

9. octagon that is not regular

10. regular triangle

Find the unknown angle measure.

11. _________

12. _________

13. _________

14. _________

Find the pattern. Then write a rule. Use your rule to draw the next figure in the pattern.

15. \( \triangle \ \triangle \triangle \ \triangle \ \triangle \triangle \triangle \)

16. _________

Mixed Review

17. \( \frac{7,777}{\times} \ 77 \)

18. What is the square root of 256?

19. \( \div 12)82,432 \)

20. What is \( 4^4 \)?
Circles

Vocabulary

Write the correct letter from Column 2.

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. chord</td>
<td>a. a tool for constructing circles</td>
</tr>
<tr>
<td>2. diameter</td>
<td>b. a line segment that connects the center with a point on the circle</td>
</tr>
<tr>
<td>3. circle</td>
<td>c. a line segment that connects any two points on the circle</td>
</tr>
<tr>
<td>4. radius</td>
<td>d. a closed figure with all points on the figure the same distance from the center point.</td>
</tr>
<tr>
<td>5. compass</td>
<td>e. a chord that passes through the center of the circle</td>
</tr>
</tbody>
</table>

For 6–7, use circle C.

6. If $AC$ is 6 in. long, how long is $CE$?

7. If $AC$ is 6 in. long, how long is $AD$?

Use a compass to draw each circle. Draw the radius and the diameter, and label the measurements.

8. radius = _____
   diameter = 5 cm

9. radius = 4 cm
   diameter = _____

10. radius = _____
    diameter = 6 cm

Mixed Review

11. $\frac{436}{85}$
12. $\sqrt{2,704}$
13. $5^2$
14. $2^5$
Congruent and Similar Figures

Write *similar, congruent, or neither* to describe each pair.

1. [Diagram]
2. [Diagram]
3. [Diagram]

For 4–6, use the figures below.

4. Write the letter of the figure that is neither congruent nor similar to \(ABCD\).

5. Write the letter of the figure that is similar but not congruent to \(ABCD\).

6. Write the letter of the figure that is congruent to \(ABCD\).

**Mixed Review**

7. 6.97 + 3.1
8. 8.43 − 7.96
9. 5.02 + 6.09
10. 4.85 − 1.94
11. 5.93 − 3.59
Symmetric Figures

Draw the lines of symmetry for each figure. Tell whether each figure has rotational symmetry. Write yes or no.

1.  

2.  

3.  

4.  

5.  

6.  

Each figure has rotational symmetry. Tell the fraction and angle measure of each turn.

7.  

8.  

9.  

Mixed Review

10. Find the next number in the sequence: 1, 3, 6, 10, 15, . . .

11. Find the change from a $20 bill for purchases totalling $17.21.

12. What is $\frac{2}{3}$ of 90?

13. Dave has saved $65.50 for a radio that costs $74.98 including tax. How much more does he need to save?
Problem Solving Strategy: Find a Pattern

Find a pattern to solve. Describe the pattern.

1. What shape or shapes should be added at Step 1?

2. What shape or shapes will be added at Step 2?

3. What shape or shapes would be added at Step 6?

4. What shape or shapes would be added at Step 9?

5. What color should the blocks in Step 1 be?

6. How many blocks will be in Step 1?

7. What color blocks will be added at Step 2?

8. How many blocks will be added at Step 4?

9. What is the next number in this pattern? 3, 4, 7, 8, 11, . . . ?

10. What is shape of the 16th bead?

Mixed Review

Solve.

11. \(8,535 \times 9\)

12. A triangle has two angles measuring 45° and 61°. What is the third angle?

13. \(11 \overline{)99,341}\)
Triangles

Classify each triangle. Write isosceles, scalene, or equilateral.

1. 3 in. 4 in. 6 in.

2. 2 in. 2 in. 1 in.

3. 8 in. 8 in. 8 in.

Classify each triangle. Write right, acute, or obtuse.

4. 3 m

5. 6 m

6. 6 m

Find the unknown angle measure.

7. 50°

8. 88°

9. 37°

Use a protractor and ruler to draw triangle ABC according to the given measurements. Classify the triangle by its sides and by its angles. Then find the measure of the third angle.

10. $\angle A = 65^\circ$, $\angle C = 65^\circ$, $\overline{AC} = 4$ in.

11. $\angle C = 50^\circ$, $\angle B = 20^\circ$, $\overline{CB} = 2.5$ in.

Mixed Review

Add or subtract.

12. $\frac{1}{2} \quad 13. \quad \frac{3}{4} \quad 14. \quad \frac{11}{2} \quad 15. \quad \frac{31}{6} \quad 16. \quad \frac{21}{8} \quad 17. \quad \frac{3}{10}$

$\quad + \frac{3}{4} \quad - \frac{1}{8} \quad + \frac{3}{8} \quad - \frac{5}{6} \quad + \frac{5}{6} \quad + \frac{5}{8}$
Quadrilaterals

Vocabulary

Write the correct letter from Column 2.

Column 1

_____ 1. has 4 congruent sides and 2 pairs of congruent angles

_____ 2. has 2 pairs of congruent and parallel sides

_____ 3. has 4 sides of any length and 4 angles of any size

_____ 4. has only 1 pair of parallel sides

Column 2

a. quadrilateral
b. trapezoid
c. parallelogram
d. rhombus

Draw and classify each quadrilateral described.

5. adjacent sides not equal; 2 pairs of congruent sides; 4 right angles

6. opposite sides not parallel; angles not equal

7. a parallelogram with congruent sides

8. equal angles; 4 congruent sides

9. 2 pairs of parallel sides; 2 pairs of equal angles

10. angles not equal; only one pair of parallel sides

Mixed Review

11. \(17^3\)

12. \(0.25 \div 16.84\)

13. \(\frac{336.98}{1.8}\)

14. \(\frac{6}{7} + \frac{7}{5}\)
Transformations on the Coordinate Grid

Vocabulary

Complete.

1. When you move a figure to show a translation, reflection, or rotation, it is called a ________________.

Graph the triangle with vertices \((+2,+4), (+2,+6), \) and \((+6,+4)\). Then transform the triangle to the new given vertices. Write translation, reflection, or rotation to describe the move.

2. \((-2,+4), (-2,+6), (-6,+4)\)

3. \((+2,+4), (+4,+4), (+2,0)\)

4. \((-6,-4), (-6,-2), (-2,-4)\)

5. \((+2,-4), (+2,-6), (+6,-4)\)

Mixed Review

6. \(\frac{5.5}{6.5}\)

7. \(\frac{3}{4} - \frac{15}{20}\)

8. \(0.5\overline{0.985}\)

9. \(18,350.66 - 681.08\)
Solid Figures

Vocabulary

Fill in the blanks.

1. A _______________ is a solid figure that has two congruent faces called _______________.

2. A _______________ is a solid figure with one _______________ that is a polygon and three or more faces that are triangles with a common vertex.

3. A _______________ is a solid figure with faces that are polygons.

Classify the solid figure. Then, write the number of faces, vertices, and edges.

4. 5. 6.

__________________  ____________________  ____________________
__________________  ____________________  ____________________

Draw and classify each figure described.

7. I have 2 congruent pentagons for bases. I have 5 rectangular faces. 8. I have a base with 8 equal sides. My faces are 8 triangles.

Mixed Review

9. Write 0.125 as a fraction in simplest form.

10. \[ \frac{0.393}{3.93} \]

11. Write \( \frac{80}{100} \) in simplest form.

12. \[ \$290,460.81 + 6,387.24 \]
Draw Solid Figures from Different Views
Use grid paper to draw each figure from the top, the side, and the front.

1.  
2.  
3.  

Identify the solid figure that has the given views.

4.  
5.  

6.  
7.  

Mixed Review
8.  \[ \frac{9.78}{21} \]
9. Write three fractions equivalent to \( \frac{3}{8} \).
10. \( 6^5 \)

11.  
12. Solve for \( x \).
13. \( 7^3 \)

\[ 4 + x = 10 \]
Problem Solving Skill: Make Generalizations

Make generalizations to solve.

1. The Towers Dormitories at the University of Pittsburgh are three congruent prisms. If a side of Tower A is 229.5 feet high, how high is a side of Tower C?

2. The World Trade Center buildings in New York City are two rectangular prisms. They both have 110 stories. One tower is 6 feet shorter than the other. Is the height of their stories the same?

3. Two brands of peas are packaged in congruent boxes. One brand contains 10 ounces of peas. If you buy 6 boxes of the other brand of peas, how many ounces will you have?

4. The distance between Youngstown and Ashville is the same as the distance between Canton and Youngstown. If it takes 2 hours to drive from Youngstown to Ashville, how long should it take to drive from Youngstown to Canton?

5. Betty is cutting a rectangular cake. It measures 12 inches long by 6 inches wide. If each piece is 3 inches square, how many pieces can she cut?

6. Bart and Brett are identical twins. Brendan and Britt are also identical twins. Brendan is 5 feet tall. How tall are Bart and Brett? How did you find your answer?

Mixed Review

Solve.

7. \(90 \div 363,636\)

8. \(\frac{31}{32} - \frac{1}{4}\)

9. \(\frac{363,636}{96}\)

10. What is \(9^4\)?
Customary Length

Vocabulary

1. The smaller the unit, the more ________________ the measurement will be.

Estimate the length in inches. Then measure to the nearest $\frac{1}{16}$ inch.

2.  

3. 

Estimate the length in inches. Then measure to the nearest $\frac{1}{8}$ inch.

4.  

5. 

Draw a line segment to the given length.

6. $1\frac{3}{4}$ inch  

7. $2\frac{3}{16}$ inch  

8. $3\frac{5}{16}$ inch

Mixed Review

9. Karina's art teacher gave her an $8\frac{1}{2}$-inch by 11-inch piece of paper. He told her to leave a $\frac{3}{4}$-inch margin on all 4 sides. What are the dimensions of the remaining area?

10. Elise measures her hair ribbon. It is $9\frac{2}{3}$ inch long. Mindy’s hair ribbon is $9\frac{5}{8}$ inch long. Who has the longer hair ribbon? How much longer?
**Metric Length**

Estimate the length in centimeters. Measure to the nearest centimeter and then to the nearest millimeter.

1. [Illustration of a length to be measured]
2. [Illustration of a length to be measured]

---

Draw a line segment to the given length.

5. 4 cm 3 mm
6. 6 cm 1 mm
7. 14 mm
8. 8 mm

---

**Mixed Review**

9. Write <, >, or = for □.
   
   \[ 3.78 \text{ □ } 3\frac{3}{4} \]

10. What type of triangle has a 90 degree angle?

11. Write in simplest form: \( \frac{6}{9} \).

12. Change to a decimal \( \frac{6\frac{1}{8}}{8} \).

13. Would you rather have 6 yards or 17 feet of drapery material for the same price?

14. Subtract 6 hours 47 minutes from 9 hours and 2 minutes.
Change Linear Units

Change the unit.
1. 65 cm = _____ mm
2. 400 cm = _____ m
3. 60 in. = _____ ft
4. 3 yd = _____ in.
5. 36 ft = _____ yd
6. 1,760 yd = _____ mi

Rename the units.
7. 7 km 8 m = 6 km □ m
8. 3 mi 27 ft = 2 mi □ ft
9. 10 ft = □ yd 1 ft

Find the sum or difference.
10. 6 ft 5 in. + 3 ft 9 in.
11. 9 yd 7 ft − 6 yd 8 ft
12. 9 m 20 cm − 7 m 30 cm
13. 15 m 4 cm + 6 m 2 cm

Mixed Review

Find the product.
14. $2,345 \times 16$
15. $1,789 \times 25$
16. $3,060 \times 32$

Order from least to greatest.
17. $2 \frac{2}{11}, 1 \frac{5}{8}, 2 \frac{1}{9}, 1 \frac{3}{7}$
18. $\frac{26}{3}, \frac{22}{4}, \frac{16}{5}, \frac{21}{3}, \frac{19}{2}$

19. Karen is counting the change in her drawer. When she gets 6 more nickels, she will have $5.00 in nickels. How many nickels does she have now?

20. The Ryan family traveled 64 miles on Friday and 60.2 miles on Saturday. The Jones family traveled 59.3 miles on Friday and 63.4 miles on Saturday. Which family traveled more miles and by how much?
Customary Capacity and Weight

Change the unit.
1. \( \text{16 pt} = \_ \text{gal} \)
2. \( \text{10 c} = \_ \text{pt} \)
3. \( \text{4 qt} = \_ \text{c} \)
4. \( \text{1 gal} = \_ \text{c} \)
5. \( \text{32 fl oz} = \_ \text{pt} \)
6. \( \text{3 T} = \_ \text{lb} \)
7. \( \text{16 qt} = \_ \text{gal} \)
8. \( \text{8 c} = \_ \text{fl oz} \)

Choose the best estimate.
9. A bucket of ice cream holds
   - a 1 gallon
   - b 1 cup
   - c 1 pint
10. A coffee cup holds _____
    - a 1 gallon
    - b 3 pints
    - c 1 cup
11. A truck weighs _____
    - a 300 pounds
    - b 5 Tons
    - c 20 ounces
12. A cat weights _____
    - a 300 pounds
    - b 16 ounces
    - c 15 pounds

Mixed Review

Find the exact sum, difference or product.
13. \(2\frac{3}{4} + 1\frac{1}{8} \)
14. \(3 \times \frac{2}{5} \)
15. \(24.06 - 15.59 \)

16. What angles are greater than 90°, but less than 180°.
17. What are the prime numbers between 5 and 13?
18. If you started a bike race at 11:30 A.M. and you finished 2 hours later, then what time would it be?
19. Write fourteen thousand and six tenths in standard form.
**Metric Capacity and Mass**

Change the unit.

1. $1.5 \text{ L} = \square \text{ metric cups}$
2. $2,000 \text{ L} = \square \text{ kL}$
3. $5,000 \text{ mg} = \square \text{ g}$

Choose the best estimate.

**Mixed Review**

4. The mass of an apple pie is ______
   a 1 mg
   b 1 g
   c 1 kg

5. The mass of the puppy is ______
   a 2 kg
   b 2 g
   c 2 mg

6. The cup holds ______
   a 3 L
   b 3 mL
   c 3 kL

7. The mass of a paper clip is ______
   a 1 mg
   b 1 kg
   c 1 g

8. $600 \div 0.03 = \square$

9. Add $16.48 + 3.2 = n$

10. Write in word form: 16,345,107

11. Write 21.45 as a fraction

12. What is total number of degrees in a triangle?

13. Add 2 hours 13 minutes to 6 hours and 54 minutes.
Time

Write the time for each.

1. Start: 9:00 A.M.
   Elapsed: ________________
   End: 1:50 P.M.

2. Start: 7:27 A.M.
   Elapsed: 4 hr 24 min
   End: ________________

3. Start: Dec 1 10:15 P.M.
   Elapsed: 4 hr 10 min
   End: ________________

4. Start: ________________
   Elapsed: 16 hr 35 min
   End: March 18 3:25 A.M.

5. Start: 12:15 P.M.
   Elapsed: ________________
   End: 8:05 P.M.

6. Start: ________________
   Elapsed: 6 hr 15 min
   End: 7:25 P.M.

Add or subtract.

7. 3 hr 25 min + 6 hr 50 min
   9 hr 25 min

8. 4 hr 10 min − 1 hr 30 min
   2 hr 40 min

9. 3 hr 1 min + 5 hr 19 min
   8 hr 20 min

10. 9 hr 5 min − 2 hr 50 min

11. 8 hr 5 min + 2 hr 25 min

12. 5 hr 20 min − 2 hr 45 min

13. 6 hr 3 min + 6 hr 34 min

14. 7 hr 57 min − 6 hr 38 min

Mixed Review

15. Bob bought 50 yds of tapestry material and 40 yds of denim material to recover the chairs. The tapestry cost $45.99 per yard and the denim cost $6.50 per yard. What was his total bill?

16. Julie bought 16 pounds of apples at $1.69 per pound. How much did Julie pay?

17. \(n + 3 = 4 \times 7\)

18. \(5\frac{3}{8} + 6\frac{1}{4}\)
## Problem-Solving Strategy: Make a Table

**Make a table to solve.**

1. The pool at the community center is open daily. The swim team occupies the pool from 6:00 A.M. until 8:30 A.M. Then there is a one-hour open swim followed by four different 45-minute swim classes. At what time is the pool available?

2. Tomás starts his activities at camp at 9:30 A.M. He has swimming for \(1\frac{1}{2}\) hour, archery for 1 hour, and lunch for 30 minutes. Then he has crafts for \(2\frac{1}{2}\) hours. At what time does Tomás finish crafts?

3. The youth symphony begins auditions at 10:00 A.M. Each student is given 10 minutes to perform. If Claudia is the 12th in line, at what time is her audition?

4. Kelly reads stories to children at the library. There are 3 sessions. Each lasts 45 minutes, with 30 minutes between sessions. If Kelly starts reading at 10:00 A.M., at what time does she finish?

### Mixed Strategy Practice

**Solve the equation. Identify the property used.**


6. Gil’s mom changes the oil in her car every 3,000 miles. If she drives 18,000 miles per year, how many times does she change her oil each year?

7. What is the next number in the pattern? 24, 19, 14, 9, ?

8. The museum sells 3 maps for $12.99. How much is each map?
Perimeter

Find the perimeter of each polygon.

1. 
   \[
   \text{Rectangle: } \ 5 \text{ cm} \times 4 \text{ cm}
   \]

2. 
   \[
   \text{Pentagon: } 8 \text{ ft}
   \]

3. 
   \[
   \text{Triangle: } 5 \text{ cm}
   \]

4. 
   \[
   \text{Polygon: } 5.5 \text{ cm}, 2.1 \text{ cm}, 3.6 \text{ cm}, 3.2 \text{ cm}, 4.5 \text{ cm}
   \]

5. 
   \[
   \text{Quadrilateral: } 50 \text{ cm}, 80 \text{ cm}
   \]

6. 
   \[
   \text{Rectangle: } 13 \text{ in}, 8 \text{ in}, 6 \text{ in}, 5 \text{ in}
   \]

7. 
   \[
   \text{Square: } 2.6 \text{ cm}
   \]

8. 
   \[
   \text{Triangle: } 30 \text{ cm}, 55 \text{ cm}, 45 \text{ cm}
   \]

9. 
   \[
   \text{Square: } 5 \frac{1}{2} \text{ ft}
   \]

Mixed Review

10. Name the addition property used in this equation. \( (9 + 1) + 3 = 9 + (1 + 3) \)

11. What number’s value is 100,000 less than 1,547,298?

12. Write forty-five ten-thousandths in standard form.

13. \( 8.9 + 0.92 + 0.095 + 8.4 + 0.9 \)

14. \( 6 \times \$1.65 \)

15. \( 16 \div 450 \)
Algebra: Circumference

For 1–6 complete the table.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>9.42 cm</td>
<td>3 cm</td>
</tr>
<tr>
<td>2.</td>
<td>5 in.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>4.5 ft</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>7 mi</td>
</tr>
<tr>
<td>5.</td>
<td>12 yd</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td>8.5 cm</td>
</tr>
</tbody>
</table>

Find the circumference of a circle that has

7. a diameter of 34 in.

8. a radius of 6 ft

9. a radius of 2 m

10. a diameter of 100 yd

Mixed Review

11. What is the perimeter of a square that measures 4.5 ft on one side?

12. Write one hundred thirty-five ten-thousandths in standard form.

13. Find the average of 1.5, 2, 2.5, and 1.

14. Each player on the basketball team is required to have an average of 80 or better. 76, 85, 70, 90, 71, and 82 are the math scores of one basketball player. Find his average. Will he be able to play on the team?

15. $12 \times n = 600$

16. $\overline{23|658}$
Algebra: Area of Squares and Rectangles

Find the area of each figure.

1. \[ \text{square with side length 3 cm} \]

2. \[ \text{rectangle with length 5 cm and width 12 cm} \]

3. \[ \text{rectangle with length 11 cm and width 16.5 cm} \]

4. \[ \text{square with side length 21 m} \]

Find each missing measurement.

5. \( s = 3.2 \text{ yd} \)
   \[ A = \boxed{} \]

6. \( s = 5\frac{1}{2} \text{ in.} \)
   \[ A = \boxed{} \]

7. \( s = 60 \text{ cm} \)
   \[ A = \boxed{} \]

8. \( l = 9 \text{ m} \)
   \( w = 12 \text{ m} \)
   \[ A = \boxed{} \]

9. \( l = \boxed{} \)
   \( w = 3.1 \text{ mi} \)
   \[ A = 31 \text{ mi}^2 \]

10. \( l = 4.5 \text{ ft} \)
    \( w = \boxed{} \)
    \[ A = 72 \text{ ft}^2 \]

Mixed Review

11. \( 22 \div 456 \)

12. Name the factors of 11. Is it a prime or composite number?
Relate Perimeter and Area

Use the grid below to draw rectangles for the given perimeter. Name the length and width of the rectangle with the greatest area. (Use whole numbers.)

1. \( P = 50 \text{ cm} \)  
2. \( P = 34 \text{ cm} \)  
3. \( P = 12 \text{ cm} \)

Find the dimensions of the rectangle with the least perimeter and the given area. (Use whole numbers.)

4. \( A = 30 \)  
5. \( A = 12 \)  
6. \( A = 21 \)

7. \( A = 50 \)  
8. \( A = 4 \)  
9. \( A = 48 \)

Mixed Review

10. What is the least common multiple of 15 and 10?  
11. Change \( \frac{1}{20} \) to a decimal.

12. \( \frac{1}{3} + \frac{2}{5} \)  
13. Change 42 in. to feet.
Algebra: Area of Triangles

Find the area of each triangle.

1. 

Find the area of each triangle.

3. base \((b) = 4 \text{ cm}\) height \((h) = 5 \text{ cm}\)

4. base \((b) = 12 \text{ yd}\) height \((h) = 12 \text{ yd}\)

5. base \((b) = 3.5 \text{ mi}\) height \((h) = 10 \text{ mi}\)

6. base \((b) = 10 \text{ in.}\) height \((h) = 4 \text{ in.}\)

7. base \((b) = 7 \text{ ft}\) height \((h) = 6 \text{ ft}\)

8. base \((b) = 21 \text{ cm}\) height \((h) = 12 \text{ cm}\)

Find the missing measurement for each triangle.

9. base \((b) = \) height \((h) = 50 \text{ cm}\) Area \((A) = 800 \text{ cm}^2\)

10. base \((b) = 32 \text{ ft}\) height \((h) = \) Area \((A) = 160 \text{ ft}^2\)

11. base \((b) = 4 \text{ cm}\) height \((h) = \) Area \((A) = 18 \text{ cm}^2\)

Mixed Review

12. What is the circumference of a circle that has a diameter of 8 m?

13. Is 42 a prime or composite number? What are its factors?
Algebra: Area of Parallelograms

Write the base and height of each figure.

1. 

Find the area of each parallelogram.
3. base \( b \) = 3 in.
   height \( h \) = 6 in.

4. base \( b \) = 7.5 cm
   height \( h \) = 4 cm

Find the missing measurement for the parallelogram.
5. base \( b \) = 22.5 cm
   height \( h \) = 5 cm
   Area \( A \) = 

6. base \( b \) = 
   height \( h \) = 12 yd
   Area \( A \) = 98.4 yd\(^2\)

7. base \( b \) = 3.5 mi
   height \( h \) = 
   Area \( A \) = 7.7 mi\(^2\)

Mixed Review

8. What is the area of a triangle with \( b \) = 5 inches and \( h \) = 6.5 inches?

9. What is the median of this set of data? 45, 60, 34, 56, 20, 90, 34

10. Write a number between 1.03 and 1.10.

11. What number’s value is 10,000 greater than 298,469?
Solve a Simpler Problem
Solve a simpler problem to solve.

1. What is the area of the smallest section of the park?

2. What is the area of the largest section of the park?

3. How many square yards is the park?

4. If a 2 yd by 6 yd rectangular pond were built next to the picnic section, what would the new area of the park be?

Mixed Review

5. Each bottle of fertilizer covers 25 ft². How many bottles does the gardener need to fertilize the playground?

6. It takes the gardener 5 minutes to mow 50 ft². How long will it take him to mow the playground?

7. The sun’s surface is close to 10,000 °F. Its inner core may reach temperatures near 35 million degrees. The diameter of the sun is 864,000 mi. Tell whether too much too little information was given to find the circumference of the sun.

8. There are nine planets that revolve around the sun along oval shape paths. The Earth takes one year or 356 days to make one revolution. Tell whether too much too little information was give to find the distance from the Earth to the Sun.

9. What is the perimeter of an equilateral triangle that has a side length of 16 cm?

10. What is the area of a triangle that has a base of 4 in. and a height of 4 in.?
Nets for Solid Figures

Vocabulary

Complete.

A ____________ is a two-dimensional pattern for a three-dimensional solid.

Match each solid figure with its net. Write a, b, c, or d.

1. 2. 3. 4.

Circle the letter of the net that can be folded to make the figure.

5. a. b. c.

6. a. b. c.

Mixed Review

7. What faces would you find in a net for a square pyramid?

8. Cara earns $36.75 a week for 7 hours of babysitting. How much does she earn in 4 weeks? How much does she earn an hour?
Surface Area

Use the net to find the area of each face. Then find the surface area of each prism.

1. [Net diagram for a rectangular prism]

2. [Net diagram for a cube]

For 3–4 find the surface area in cm². You may want to make the net.

3. [Net diagram for another rectangular prism]

4. [Net diagram for another cube]

5. What is the surface area of a box 6 feet long, 4 feet wide, and 8 feet high?

6. What is the surface area of a cube whose sides are 12 feet long?

Mixed Review

7. $8 - 2\frac{3}{8}$

8. $35.8 \div 2$

9. $3.5 \times 4.9$

10. $5.79 \div 3$

11. List all possible digits for ■.
   $5.31 < 5.■2 < 5.53$

12. Compare.
   $0.532 \bullet 0.083$
Algebra: Volume

Find the volume of each rectangular prism.

1. \( \text{Volume} = 165 \text{ yd}^3 \)
2. \( \text{Volume} = 288 \text{ in.}^3 \)
3. \( \text{Volume} = 288 \text{ yd}^3 \)

Algebra  Find the unknown dimension.

4. length = 11 yd
   width = 5 yd
   height = ________
   Volume = 165 yd\(^3\)

5. length = 14 ft
   width = 9 ft
   height = 4 ft
   Volume = ________

6. length = 8 in.
   width = ________
   height = 9 in.
   Volume = 288 in.\(^3\)

7. length = 5 cm
   width = 3 cm
   height = 15 cm
   Volume = ________

8. length = 6 yd
   width = 8 yd
   height = ________
   Volume = 288 yd\(^3\)

9. length = ________
   width = 11 in.
   height = 5 in.
   Volume = 385 in.\(^3\)

10. length = 15 in.
    width = 8 in.
    height = 2 in.
    Volume = ________

11. length = 6.5 m
    width = ________
    height = 2.5 m
    Volume = 65 yd\(^3\)

12. length = ________
    width = 5&frac12; ft
    height = 3&frac14; ft
    Volume = 143 ft\(^3\)

Mixed Review

13. Margie bought 8 cans of tomato soup and 4 cans of mushroom soup. She spent nine dollars and eighty-eight cents. The tomato soup cost $0.79 per can. What did the mushroom soup cost per can?

14. Tom wants to buy a stereo that costs $540.00. He has saved \( \frac{1}{3} \) of the cost. How much has Tom saved?
Measure Perimeter, Area, and Volume

Tell the appropriate units to measure each. Write units, square units, or cubic units.

1. space in a toaster
2. space in an oven
3. tile for a floor
4. a wallpaper border
5. paper to cover a gift
6. fence for a garden

Write the units you would use to measure each.

7. volume of this prism
8. perimeter of this figure
9. surface area of this prism

10. area of this figure
11. volume of this prism
12. area of this figure

Mixed Review

Evaluate.

13. \((27 - n) + 9 = ? \) if \( n = 19 \)
14. \((n \times 5) - 6 = ? \) if \( n = 7 \)
Use a Formula

Use a formula and solve.

1. A garden that is 18 feet wide and 22 feet long needs to be fenced. Will 25 yards of fencing be enough? Explain.

2. The trailer of a lumber truck is 15 feet wide, 18 feet long, and 10 feet high. Is the truck large enough to carry 2,500 cubic feet of lumber?

3. Tim has a box that is 18 inches long and 12 inches wide and has a volume of 3,240 cubic inches. He wants to pack an object that is 9 inches long, 6 inches wide, and 16 inches high. Will the object fit in the box? Explain.

4. New flooring is being installed in the school foyer. The area is 15 feet wide and 33 feet long. How many square yards of flooring are needed? What is the perimeter of the foyer, measured in feet? Explain how you found your answers.

Mixed Review

Solve.

5. Classes at the high school begin at 7:45 A.M. Each class is 50 minutes long, and there is a 7-minute break after each class. At what time does the second class of the day end?

6. A swimming pool is 60 feet long and 30 feet wide. How many cubic feet of water will be needed to fill the pool to a depth of 8 feet?
Probability Experiments

Vocabulary

Fill in the blank.

1. A table of \( \text{________________________} \) shows results that could occur.

Write the possible events.

2. rolling a cube labeled 12, 14, 16, 18, 20, 22

3. spinning the pointer on a spinner with sections of red, blue, and yellow

4. pulling a can from a grocery bag with 1 can of corn, 2 cans of beans, and 1 can of peas

5. pulling a shape out of a bag that has 3 red squares, 2 blue squares, and 0 yellow squares

6. tossing a coin with heads on one side and tails on the other

7. picking a marble from a bag that has 1 red, 2 green, and 1 yellow marble

Mixed Review

Find the value of \( n \).

8. \( 12 + 5 = n \) \( \boxed{17} \) 9. \( 20 - n = 5 \) \( \boxed{15} \) 10. \( n - 8 = 15 \) \( \boxed{23} \)

11. \( 6 + n = 11 \) \( \boxed{5} \) 12. \( n + 14 = 28 \) \( \boxed{14} \) 13. \( 40 - n = 5 \) \( \boxed{35} \)

14. \( 10 \times n = 100 \) \( \boxed{10} \) 15. \( n \times 7 = 28 \) \( \boxed{4} \) 16. \( 81 \div n = 9 \) \( \boxed{9} \)

17. \( 8 \times 2 = n \) \( \boxed{16} \) 18. \( 45 \div n = 5 \) \( \boxed{9} \) 19. \( n \times 9 = 27 \) \( \boxed{3} \)

Divide.

20. \( 14 \div 126 \) 21. \( 6 \div 0.036 \) 22. \( 17 \div 289 \) 23. \( 23 \div 1035 \)
Outcomes

Vocabulary

Fill in the blank.

1. A ________________ shows all the possible outcomes of an event.

Make a tree diagram to show the possible choices. Solve.

2. For a snack, Sue can have either an apple or a cheese slice. She can have either a glass of milk or a glass of grape juice. How many different snack choices does Sue have?

3. For breakfast, Jill can have either oat or wheat cereal. She can top the cereal with either raisins, bananas, strawberries, or blueberries. How many breakfast choices does Jill have?

4. Bill can make a picture with either paints or markers or both. He can use either construction paper or poster paper. How many different ways can Bill make a picture?

5. For gift wrapping, Elsa has a choice of either red, blue, pink, or orange paper. She has a choice of either red, blue, pink, or orange ribbon. How many different ways can Elsa wrap a gift?

Mixed Review

6. 4.01 + 3.69
7. 6.905 + 4.98
8. 9.463 − 1.02
9. 16.5 − 9.6
10. 28.06 + 5.09

11. 7.35 − 0.98
12. 7.150 + 5.051
13. 0.108 + 7.962
14. 0.54 − 0.37
15. 5.982 + 0.153

16. 19.71 − 15.09
17. 6.118 + 4.212
18. 31.407 + 50.527
19. 18.3 + 28.8
20. 6.3172 − 1.0984
Probability Expressed as a Fraction

Vocabulary

Fill in the blanks.

1. ___________ is the chance that an event will happen.

2. Each outcome is ________________, or has the same chance of happening.

Write a fraction for the probability of pulling each color marble from a bag of 4 red, 1 green, 2 blue, and 3 yellow marbles.

3. green 4. red 5. orange 6. blue

Write a fraction for the probability of spinning each color on a spinner with 2 red, 3 yellow, 2 green, and 1 blue sections.

7. yellow 8. red 9. yellow or blue 10. blue

11. Angie is one of 30 girls trying out for the 12 positions on the basketball team. What is the probability that Angie will make the team?

12. Of 100 tickets available for the school raffle, Tom bought 3, Jack bought 5, and Mark bought 2. What is the probability of each boy winning?

Mixed Review

13. $3.2\overline{653}$

14. $(7 \times 6) + (3 \times \frac{1}{2}) = n$

15. $\frac{1}{6} \div \frac{1}{2}$

16. $(7 \times 4) - (2.5 \times 2) = n$

17. $\frac{2}{3} \cdot \frac{4}{3}$

18. $329 - (12 \cdot 11) = n$
Compare Probabilities

For 1–6, use a bag of 3 red, 5 blue, 4 yellow, and 3 green buttons. Write each probability as a fraction. Tell which event is more likely.

1. You pull a yellow button. ________
   You pull a red button. ________
   More likely ________

2. You pull a blue button. ________
   You pull a green button. ________
   More likely ________

3. You pull a red or yellow button. ________
   You pull a green or blue button. ________
   More likely ________

4. You pull a blue button. ________
   You pull a black button. ________
   More likely ________

5. You pull a button that isn’t green. ________
   You pull a button that isn’t yellow. ________
   More likely ________

6. You pull a button that isn’t red. ________
   You pull a button that isn’t blue. ________
   More likely ________

7. Joey had 2 pairs of red socks, 4 pairs of black socks, and 12 pairs of white socks. What is the probability that he will pull a pair of black socks from his drawer?

8. Raimondo has pizza once a week for dinner. What is the probability that he will have pizza for dinner tonight?

Mixed Review

9. $35.6 \div 2071.92$

10. $\frac{1}{2} \times \frac{5}{6} =$

11. $3 \frac{1}{3} \div \frac{1}{6} =$
Problem-Solving Strategy

Make an Organized List

Make an organized list to solve.

1. Aber is conducting a probability experiment with a number cube and two marbles. The cube is numbered 1–6. One marble is red, the other blue. How many possible outcomes are there for this experiment? What is the probability for getting 1 blue?

2. Mark feeds his cat a cup of dry food and a can of wet food every day. The dry food is either chicken or fish flavored. The wet food is either tuna, salmon, or beef. List all the possible combinations of wet and dry cat food. What is the probability of picking chicken?

Mixed Review

Solve.

3. In the school election, Dave received 38 percent of the vote, Marcia received 41 percent, and Claudia received 21 percent. What type of graph would Dave use to display the data?

4. Estelle uses the numbers 3, 5, and 7 to write two-digit numbers without repeating any digits in the same number. List her numbers.

5. Martha has 6 coins that are quarters, dimes, and nickels. She has a total of $0.80. What combination of coins does she have?

6. At the movies, Jorge spent $0.95 on soda and $2.25 on popcorn. The ticket cost $4.50. If he has $2.30 left, how much money did Jorge have to begin with?