Chapter 2  Whole Number Multiplication and Division

Practice 1  Using a Calculator

Add.

1. 215 + 9,843 =

2. 6,789 + 18 =

3. 97 + 8,154 =

4. 1,693 + 8,157 =

Subtract.

5. 8,215 − 79 =

6. 6,286 − 129 =

7. 2,159 − 1,998 =

8. 26,145 − 9,354 =

Multiply.

9. 359 × 12 =

10. 217 × 58 =

11. 1,975 × 5 =

12. 7,050 × 8 =

Divide.

13. 504 ÷ 9 =

14. 4,104 ÷ 6 =

15. 8,160 ÷ 85 =

16. 17,604 ÷ 18 =
Only one path after each problem has the correct answer.
Trace Flavio’s path by choosing the paths with the correct answers.

17.

The prize at the end of Flavio’s path is:

[Image of the diagram with paths and problems]

[Images of prizes: fish, football, baseball, soccer, basketball, golf club]
Practice 2  Multiplying by Tens, Hundreds, or Thousands

Multiply.
1.  $47 \times 10 = \underline{470}$
2.  $38 \times 10 = \underline{380}$

3.  $109 \times 10 = \underline{1090}$
4.  $521 \times 10 = \underline{5210}$

5.  $7,140 \times 10 = \underline{71,400}$
6.  $1,503 \times 10 = \underline{15,030}$

7.  $3,702 \times 10 = \underline{37,020}$
8.  $9,342 \times 10 = \underline{93,420}$

Find the missing factors.
9.  $96 \times \underline{10} = 960$
10.  $\underline{100} \times 10 = 700$

11.  $514 \times \underline{10} = 5,140$
12.  $\underline{500} \times 10 = 5,000$

13.  $308 \times \underline{10} = 3,080$
14.  $\underline{400} \times 10 = 4,020$

15.  $2,096 \times \underline{10} = 20,960$
16.  $\underline{900} \times 10 = 91,760$
Complete.

Example

\[ 65 \times 40 = (65 \times \underline{4}) \times 10 \]

\[ = \underline{260} \times 10 \]

\[ = \underline{2,600} \]

17. \[ 39 \times 30 \]

\[ = (39 \times \underline{____}) \times 10 \]

\[ = \underline{____} \times 10 \]

\[ = \underline{____} \]

18. \[ 143 \times 90 \]

\[ = (143 \times \underline{____}) \times \underline{____} \]

\[ = \underline{____} \times \underline{____} \]

\[ = \underline{____} \]

19. \[ 360 \times 30 \]

\[ = (360 \times \underline{____}) \times \underline{____} \]

\[ = \underline{____} \times \underline{____} \]

\[ = \underline{____} \]

20. \[ 285 \times 80 \]

\[ = (285 \times \underline{____}) \times \underline{____} \]

\[ = \underline{____} \times \underline{____} \]

\[ = \underline{____} \]
Multiply.

21. \(7 \times 1,000 = \) _________

22. \(86 \times 100 = \) _________

23. \(70 \times 1,000 = \) _________

24. \(95 \times 100 = \) _________

25. \(400 \times 1,000 = \) _________

26. \(217 \times 100 = \) _________

27. \(726 \times 1,000 = \) _________

28. \(803 \times 100 = \) _________

29. \(8,032 \times 1,000 = \) _________

30. \(3,810 \times 100 = \) _________

31. \(3,936 \times 1,000 = \) _________

What cat has long, fine hair, and a snubbed nose?
Write the letters that match the answers below to find out.

\[
\begin{array}{cccccccc}
21,700 & 9,500 & 7,000 & 80,300 & 726,000 & 70,000 & 3,936,000 \\
\end{array}
\]
Find the missing factors.

32. \(17 \times \underline{\text{________}} = 1,700\) \hspace{1cm} 33. \(\underline{\text{________}} \times 1,000 = 25,000\)

34. \(\underline{\text{________}} \times 1,000 = 478,000\) \hspace{1cm} 35. \(320 \times \underline{\text{________}} = 320,000\)

36. \(1,315 \times \underline{\text{________}} = 131,500\) \hspace{1cm} 37. \(\underline{\text{________}} \times 1,000 = 2,662,000\)

38. \(4,668 \times \underline{\text{________}} = 466,800\) \hspace{1cm} 39. \(\underline{\text{________}} \times 100 = 576,000\)

Complete.

Example

\[
4 \times 300 = (4 \times \underline{\text{3}}) \times 100
\]

\[
= \underline{12} \times 100
\]

\[
= 1,200
\]

40. \(12 \times 500 = (12 \times \underline{\text{________}}) \times 100\)

\[
= \underline{\text{________}} \times 100
\]

\[
= \underline{\text{________}}
\]

41. \(700 \times 900 = (700 \times \underline{\text{________}}) \times 100\)

\[
= \underline{\text{________}} \times 100
\]

\[
= \underline{\text{________}}
\]
Lesson 2.2  Multiplying by Tens, Hundreds, or Thousands

Name: ___________________________  Date: ______________________

Complete.

42.  $814 \times 700$
   
   $= (814 \times \underline{\phantom{000}}) \times 100$

   $= \underline{\phantom{000}} \times 100$

   $= \underline{\phantom{000}}$

43.  $5,400 \times 800$
   
   $= (5,400 \times \underline{\phantom{000}}) \times 100$

   $= \underline{\phantom{000}} \times 100$

   $= \underline{\phantom{000}}$

44.  $5 \times 7,000$
   
   $= (5 \times \underline{\phantom{00000}}) \times 1,000$

   $= \underline{\phantom{00000}} \times 1,000$

   $= \underline{\phantom{00000}}$

45.  $8 \times 5,000$
   
   $= (8 \times \underline{\phantom{00000}}) \times 1,000$

   $= \underline{\phantom{00000}} \times 1,000$

   $= \underline{\phantom{00000}}$

46.  $12 \times 3,000$
   
   $= (12 \times \underline{\phantom{00000}}) \times 1,000$

   $= \underline{\phantom{00000}} \times 1,000$

   $= \underline{\phantom{00000}}$

47.  $15 \times 2,000$
   
   $= (15 \times \underline{\phantom{00000}}) \times 1,000$

   $= \underline{\phantom{00000}} \times 1,000$

   $= \underline{\phantom{00000}}$

48.  $300 \times 4,000$
   
   $= (300 \times \underline{\phantom{00000}}) \times 1,000$

   $= \underline{\phantom{00000}} \times 1,000$

   $= \underline{\phantom{00000}}$

49.  $663 \times 6,000$
   
   $= (663 \times \underline{\phantom{00000}}) \times 1,000$

   $= \underline{\phantom{00000}} \times 1,000$

   $= \underline{\phantom{00000}}$
## Multiply.

<table>
<thead>
<tr>
<th></th>
<th>Multiplying by Tens</th>
<th>Multiplying by Hundreds</th>
<th>Multiplying by Thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>50.</strong></td>
<td>$17 \times 70$</td>
<td>$17 \times 700$</td>
<td>$17 \times 7,000$</td>
</tr>
<tr>
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<td>$=$</td>
<td>$=$</td>
<td>$=$</td>
</tr>
<tr>
<td><strong>51.</strong></td>
<td>$65 \times 30$</td>
<td>$65 \times 300$</td>
<td>$65 \times 3,000$</td>
</tr>
<tr>
<td></td>
<td>$=$</td>
<td>$=$</td>
<td>$=$</td>
</tr>
<tr>
<td><strong>52.</strong></td>
<td>$90 \times 40$</td>
<td>$90 \times 400$</td>
<td>$90 \times 4,000$</td>
</tr>
<tr>
<td></td>
<td>$=$</td>
<td>$=$</td>
<td>$=$</td>
</tr>
<tr>
<td><strong>53.</strong></td>
<td>$812 \times 10$</td>
<td>$812 \times 100$</td>
<td>$812 \times 1,000$</td>
</tr>
<tr>
<td></td>
<td>$=$</td>
<td>$=$</td>
<td>$=$</td>
</tr>
<tr>
<td><strong>54.</strong></td>
<td>$634 \times 20$</td>
<td>$634 \times 200$</td>
<td>$634 \times 2,000$</td>
</tr>
<tr>
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<td>$=$</td>
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</table>

## Find the missing factors.

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<table>
<thead>
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<tbody>
<tr>
<td><strong>55.</strong></td>
<td>$31 \times ____ = 3,100$</td>
</tr>
<tr>
<td><strong>56.</strong></td>
<td>$30 \times ____ = 90,000$</td>
</tr>
<tr>
<td><strong>57.</strong></td>
<td>$103 \times ____ = 3,090$</td>
</tr>
<tr>
<td><strong>58.</strong></td>
<td>$25 \times ____ = 5,000$</td>
</tr>
</tbody>
</table>
The owner of an electronics store wants to estimate the amount she will receive from the sales of these items:

- 58 all-in-one printers at $219 each.
- 652 radio clocks at $73 each.
- 99 portable audio players at $217 each.
- 39 plasma television sets at $4,156 each.

Estimate the amount she receives for each type of item by rounding to the greatest place value. Then, estimate the total amount from the sales of the items.

59. \(58 \times \$219\) rounds to ________ \(\times \$\) ________ = $ ________

60. \(652 \times \$73\) rounds to ________ \(\times \$\) ________ = $ ________

61. \(99 \times \$217\) rounds to ________ \(\times \$\) ________ = $ ________

62. \(39 \times \$4,156\) rounds to ________ \(\times \$\) ________ = $ ________

63. The total estimated amount is

\[\$ \text{ } ________ + \$ \text{ } ________ + \$ \text{ } ________ + \$ \text{ } ________ \]

\[= \$ \text{ } ________ \]
Multiply. Explain how you can check if your answer is reasonable.

\[184 \times 97\]
Practice 3  Multiplying by Powers of Ten

Multiply.

Example

\[ 36 \times 10^2 = 36 \times (\underline{10} \times \underline{10}) \]

\[ = 36 \times \underline{100} \]

\[ = \underline{3,600} \]

1. \[ 17 \times 10^2 = 17 \times (\underline{\quad} \times \underline{\quad}) \]

\[ = 17 \times \underline{\quad} \]

\[ = \underline{\quad} \]

2. \[ 98 \times 10^2 = 98 \times (\underline{\quad} \times \underline{\quad}) \]

\[ = 98 \times \underline{\quad} \]

\[ = \underline{\quad} \]

3. \[ 432 \times 10^2 = 432 \times (\underline{\quad} \times \underline{\quad}) \]

\[ = 432 \times \underline{\quad} \]

\[ = \underline{\quad} \]
Multiply.

4. \( 625 \times 10^2 = \)

5. \( 1,000 \times 10^2 = \)

6. \( 5,118 \times 10^2 = \)

7. Tyler multiplied \( 3,406 \times 10^2 \) in the following way:

\[
3,406 \times 10^2 = 3,406 \times 10 \times 2 \\
= 34,060 \times 2 \\
= 68,120
\]

Is Tyler’s method correct? If not, explain the error and show the correct way to evaluate the numerical expression.
Multiply.

Example

\[ 62 \times 10^3 = 62 \times (\underline{10} \times \underline{10} \times \underline{10}) \]

\[ = 62 \times \underline{1000} \]

\[ = \underline{62,000} \]

8. \( 53 \times 10^3 = 53 \times (\underline{\quad} \times \underline{\quad} \times \underline{\quad}) \)

\[ = 53 \times \underline{\quad} \]

\[ = \underline{\quad} \]

9. \( 74 \times 10^3 = 74 \times (\underline{\quad} \times \underline{\quad} \times \underline{\quad}) \)

\[ = 74 \times \underline{\quad} \]

\[ = \underline{\quad} \]

10. \( 318 \times 10^3 = 318 \times (\underline{\quad} \times \underline{\quad} \times \underline{\quad}) \)

\[ = 318 \times \underline{\quad} \]

\[ = \underline{\quad} \]
Multiply.

11. \(907 \times 10^3 = \)

12. \(4,125 \times 10^3 = \)

13. \(2,000 \times 10^3 = \)

Complete with 10, \(10^2\), or \(10^3\).

14. To change from kilograms to grams, multiply by ___________.

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Practice 4  Multiplying by 2-Digit Numbers

Multiply. Estimate to check if your answers are reasonable.

Example

\[
43 \times 20 = (43 \times 2) \times 10 \quad \text{or} \quad 43 \times 20 = 860
\]

43 rounds to 40.
40 \times 20 = 800
The answer is reasonable.

1. \( 59 \times 40 = \)

2. \( 91 \times 14 = \)

3. \( 96 \times 15 = \)

4. \( 23 \times 17 = \)
Multiply. Estimate to check if your answers are reasonable.

Example

\[ 510 \times 30 = (510 \times 3) \times 10 \]
\[ = 1,530 \times 10 \]
\[ = 15,300 \]

510 rounds to 500.
500 \times 30 = 15,000
The answer is reasonable.

5. \( 750 \times 60 = \)

6. \( 614 \times 31 = \)

7. \( 556 \times 47 = \)

8. \( 843 \times 25 = \)
Multiply. Estimate to check if your answers are reasonable.

Example

\[1,970 \times 20 = (1,970 \times 2) \times 10\]

\[= 3,940 \times 10\]

\[= 39,400\]

\[
\begin{array}{c}
1,970 \\
\times 20 \\
\hline
39,400
\end{array}
\]

1,970 rounds to 2,000.

2,000 \times 20 = 40,000

The answer is reasonable.

9. \[3,610 \times 60 = \]

10. \[8,142 \times 16 = \]

11. \[5,193 \times 35 = \]

12. \[4,563 \times 29 = \]
Multiply. Estimate to check if your answers are reasonable.

13. \( 85 \times 35 = \)    
14. \( 78 \times 21 = \)

15. \( 738 \times 96 = \)    
16. \( 921 \times 57 = \)

17. \( 3,072 \times 82 = \)    
18. \( 7,846 \times 63 = \)
Jodi estimated these products.

a. $2,892 \times 21$ rounds to $3,000 \times 20 = 60,000$

b. $2,743 \times 18$ rounds to $3,000 \times 20 = 60,000$

She then worked out the actual answers. Even though the estimated answers were the same, Jodi found that the actual answers were very different from each other.

1. In which case is the estimate closer to the actual answer? Explain why.
2. If an estimate does not make your answer seem reasonable, what can you do to make sure you have done your work correctly?
Practice 5  Dividing by Tens, Hundreds, or Thousands

Complete.

1.  $100 \div 10 = \underline{_______}$
2.  $670 \div 10 = \underline{_______}$
3.  $1,050 \div \underline{_______} = 105$
4.  $\underline{_______} \div 10 = 1,974$
5.  $52,260 \div 10 = \underline{_______}$
6.  $30,500 \div \underline{_______} = 3,050$

Complete.

Example

$5,610 \div 30$

$= (5,610 \div \underline{10}) \div 3$

$= \underline{561} \div 3$

$= \underline{187}$

7.  $3,000 \div 60$

$= (3,000 \div 10) \div \underline{_______}$

$= \underline{_______} \div 6$

$= \underline{_______}$

8.  $1,040 \div 40$

$= (1,040 \div \underline{_______}) \div \underline{_______}$

$= \underline{_______} \div \underline{_______}$

$= \underline{_______}$

Lesson 2.5  Dividing by Tens, Hundreds, or Thousands
Complete.

9. \[8,700 \div 60\]
   \[= (8,700 \div \underline{} ) \div \underline{\quad} \]
   \[= \underline{\quad} \div \underline{\quad} \]
   \[= \underline{\quad} \quad \text{T} \]

10. \[3,450 \div 50\]
   \[= (3,450 \div \underline{} ) \div \underline{\quad} \]
   \[= \underline{\quad} \div \underline{\quad} \]
   \[= \underline{\quad} \quad \text{R} \]

11. \[34,230 \div 70\]
   \[= (34,230 \div \underline{} ) \div \underline{\quad} \]
   \[= \underline{\quad} \div \underline{\quad} \]
   \[= \underline{\quad} \quad \text{N} \]

Which U.S. president had a sign on his desk that said ‘The buck stops here’? Write the letters on pages 47 and 48 that match the answers below to find out.

HARRY S. \[\quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \quad \underline{\quad} \]
Divide.

12. \(3,400 \div 100 = \) \[\text{P}\]

13. \(560,000 \div 1,000 = \) \[\text{H}\]

14. \(5,000 \div 100 = \) \[\text{S}\]

15. \(38,000 \div 1,000 = \) \[\text{I}\]

16. \(7,700 \div 10^2 = \) \[\text{N}\]

17. \(360,000 \div 10^3 = \) \[\text{M}\]

18. \(2,000 \div 10^2 = \) \[\text{B}\]

19. \(415,000 \div 10^3 = \) \[\text{A}\]

To which class of animals does the salamander belong? Write the letters that match the answers below to find out.

| 415 | 360 | 34 | 560 | 38 | 20 | 38 | 415 | 77 | 50 |

Lesson 2.5  Dividing by Tens, Hundreds, or Thousands
Complete.

Example

\[
\frac{600}{300} = \left( \frac{600}{100} \right) \div 3 = \frac{6}{3} = 2
\]

20. \(\frac{1600}{400} = \left( \frac{1600}{\text{______}} \right) \div \text{______}

= \text{______} \div \text{______}

= \text{______}

21. \(\frac{81000}{900} = \left( \frac{81000}{\text{______}} \right) \div \text{______}

= \text{______} \div \text{______}

= \text{______}

22. \(\frac{31500}{500} = \left( \frac{31500}{\text{______}} \right) \div \text{______}

= \text{______} \div \text{______}

= \text{______}

Complete.

Example

\[
\frac{9000}{3000} = \left( \frac{9000}{1000} \right) \div 3 = \frac{9}{3} = 3
\]

23. \(\frac{56000}{7000} = \left( \frac{56000}{\text{______}} \right) \div \text{______}

= \text{______} \div \text{______}

= \text{______}

24. \(\frac{133000}{7000} = \left( \frac{133000}{\text{______}} \right) \div \text{______}

= \text{______} \div \text{______}

= \text{______}

25. \(\frac{120000}{8000} = \left( \frac{120000}{\text{______}} \right) \div \text{______}

= \text{______} \div \text{______}

= \text{______}
Divide.

<table>
<thead>
<tr>
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<th>Dividing by Tens</th>
<th>Dividing by Hundreds</th>
<th>Dividing by Thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.</td>
<td>360 ÷ 40 =</td>
<td>3,600 ÷ 400 =</td>
<td>36,000 ÷ 4,000 =</td>
</tr>
<tr>
<td>27.</td>
<td>1,190 ÷ 70 =</td>
<td>11,900 ÷ 700 =</td>
<td>119,000 ÷ 7,000 =</td>
</tr>
<tr>
<td>28.</td>
<td>12,680 ÷ 20 =</td>
<td>126,800 ÷ 200 =</td>
<td>1,268,000 ÷ 2,000 =</td>
</tr>
<tr>
<td>29.</td>
<td>23,200 ÷ 80 =</td>
<td>232,000 ÷ 800 =</td>
<td>2,320,000 ÷ 8,000 =</td>
</tr>
</tbody>
</table>

Complete.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>30.</td>
<td>430 ÷ ______ = 43</td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>9,000 ÷ ______ = 30</td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>49,000 ÷ ______ = 7</td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>2,400 ÷ ______ = 120</td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>64,000 ÷ ______ = 160</td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>85,000 ÷ ______ = 17</td>
<td></td>
</tr>
</tbody>
</table>
Estimate each quotient.

**Example**

\[
6,452 \div 27 \text{ rounds to } 6,000 \div 30 = 200
\]

36. \(7,865 \div 41 \text{ rounds to } \underline{____________} \div \underline{__________} = \underline{__________}

37. \(9,125 \div 345 \text{ rounds to } \underline{____________} \div \underline{__________} = \underline{__________}

38. \(9,825 \div 206 \text{ rounds to } \underline{____________} \div \underline{__________} = \underline{__________}

39. \(7,226 \div 871 \text{ rounds to } \underline{____________} \div \underline{__________} = \underline{__________}

40. \(5,299 \div 49 \text{ rounds to } \underline{____________} \div \underline{__________} = \underline{__________}

41. \(3,654 \div 27 \text{ rounds to } \underline{____________} \div \underline{__________} = \underline{__________}

What number can be evenly divided by 3, 7, and 9?
Color the numbers below that match the answers above to find out.
Practice 6  Dividing by 2-Digit Numbers

Divide.

Example

\[340 \div 20 = \frac{34}{2}\]
\[= 17\]

1. 560 \div 80 =

2. 630 \div 60 =

3. 590 \div 30 =

4. 190 \div 90 =

5. 360 \div 50 =
Divide.

Example

\[
43 \div 12 = \]

12 rounds to 10.
4 × 10 = 40
The quotient is about 4.
4 × 12 = 48
The estimated quotient is too big. Try 3.

\[
\begin{array}{c c c}
\underline{12)43} \\
36 \\
\hline
7 \end{array}
\]

43 ÷ 12 = 3 R 7

6. \[
98 \div 16 =
\]

7. \[
65 \div 24 =
\]

8. \[
94 \div 37 =
\]
Divide.

Example

\[
215 \div 51
\]

215 rounds to 200.

\[
4 \times 50 = 200
\]

The quotient is about 4.

\[
\begin{array}{c}
51)215 \\
\underline{204} \\
11
\end{array}
\]

\[
215 \div 51 = 4 \text{ R } 11
\]

9. \[362 \div 60 = \]

10. \[178 \div 45 = \]

11. \[850 \div 88 = \]

12. \[273 \div 59 = \]
Divide.

Example

\[
354 \div 14
\]

\[
\begin{array}{c}
\phantom{00000} \\
14 )3 \ 5 \ 4 \\
\underline{2 \ 8} \\
7 \ 4 \\
\underline{7 \ 0} \\
\phantom{00000} 4
\end{array}
\]

3 hundreds 5 tens = 35 tens
35 tens ÷ 14 = 2 tens R 7 tens
7 tens 4 ones = 74 ones
74 ÷ 14 = 5 R 4

\[
354 \div 14 = 25 R 4
\]

13. \[850 \div 17 = \]

14. \[546 \div 25 = \]

15. \[700 \div 28 = \]

16. \[936 \div 43 = \]
Divide.

**Example**

\[
3,300 \div 30
\]

\[
\begin{array}{c}
1 \\
30 \\
300 \\
30 \\
30 \\
30 \\
0
\end{array}
\]

\[
3,300 \div 30 = 110
\]

17. \(7,500 \div 60 = \)

18. \(9,607 \div 15 = \)

19. \(5,007 \div 18 = \)

20. \(3,215 \div 22 = \)

21. \(8,012 \div 46 = \)
Play tic-tac-toe using the exercises below.

Choose 5 problems below and circle them. Work out the problems you chose. Find those remainders in the grid. Cross them out. Did you win the game?

22. \[27 \div 12\]  
23. \[58 \div 19\]  
24. \[457 \div 28\]

25. \[406 \div 25\]  
26. \[518 \div 43\]  
27. \[642 \div 58\]

28. \[6,900 \div 75\]  
29. \[1,286 \div 21\]  
30. \[2,995 \div 83\]
Practice 7  Order of Operations

Simplify. Record each step.

**Example**

\[
18 - 11 - 4 = \underline{3}
\]

1. \[26 + 8 - 19 = \underline{\quad}\]

   **Step 1** \[26 + 8 = \underline{\quad}\]

   **Step 2** \[18 - 11 = 7\]

   **Step 3** \[7 - 4 = 3\]

2. \[12 + 16 - 9 + 3 = \underline{\quad}\]

   **Step 1** \[12 + 16 = \underline{\quad}\]

   **Step 2** \[18 - 9 = 9\]

   **Step 3** \[9 + 3 = 12\]

3. \[58 - 23 + 11 - 6 = \underline{\quad}\]

   **Step 1** \[58 - 23 = \underline{\quad}\]

   **Step 2** \[35 + 11 = 46\]

   **Step 3** \[46 - 6 = 40\]

Simplify. State the order in which you performed the operations.

<table>
<thead>
<tr>
<th>Numeric Expression</th>
<th>Order of Operations Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First</td>
</tr>
<tr>
<td>[12 + 14 + 9 = 35]</td>
<td>+</td>
</tr>
<tr>
<td>4. [60 + 18 - 7]</td>
<td></td>
</tr>
<tr>
<td>5. [70 - 15 - 49]</td>
<td></td>
</tr>
<tr>
<td>6. [23 + 16 - 7 + 12]</td>
<td></td>
</tr>
<tr>
<td>7. [15 - 12 + 17 - 6]</td>
<td></td>
</tr>
</tbody>
</table>
Simplify. Record each step.

Example

\[ 9 \times 6 \div 2 = 27 \]

Step 1 \[ 9 \times 6 = 54 \]  
Step 2 \[ 54 \div 2 = 27 \]

8. \[ 25 \times 3 \div 5 = \]

Step 1 \[ \]  
Step 2 \[ \]  
Step 3 \[ \]  

9. \[ 200 \div 10 \times 3 \div 5 = \]

Step 1 \[ \]  
Step 2 \[ \]  
Step 3 \[ \]  

10. \[ 250 \div 5 \div 10 \times 2 = \]

Step 1 \[ \]  
Step 2 \[ \]  
Step 3 \[ \]  

Simplify. State the order in which you performed the operations.

<table>
<thead>
<tr>
<th>Numeric Expression</th>
<th>Order of Operations Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First</td>
</tr>
<tr>
<td>30 \times 2 \times 5 = 300</td>
<td>( \times )</td>
</tr>
<tr>
<td>11. 6 \times 10 \div 5</td>
<td></td>
</tr>
<tr>
<td>12. 28 \div 7 \times 4</td>
<td></td>
</tr>
<tr>
<td>13. 40 \div 8 \div 5</td>
<td></td>
</tr>
<tr>
<td>14. 20 \div 10 \times 8 \div 2</td>
<td></td>
</tr>
<tr>
<td>15. 120 \div 12 \div 2 \times 16</td>
<td></td>
</tr>
</tbody>
</table>
Simplify. Record each step.

**Example**

\[ 7 \times 8 - 6 = \boxed{50} \]

**Step 1** \[ 7 \times 8 = 56 \]

**Step 2** \[ 56 - 6 = 50 \]

16. \[ 14 + 9 \times 7 = \boxed{} \]

**Step 1**

17. \[ 200 \div 20 + 5 = \boxed{} \]

**Step 1**

18. \[ 80 - 16 \div 4 = \boxed{} \]

**Step 1**

Simplify. State the order in which you performed the operations.

<table>
<thead>
<tr>
<th>Numeric Expression</th>
<th>Order of Operations Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First</td>
</tr>
<tr>
<td>25 - 5 \times 3 = 10</td>
<td>(\times)</td>
</tr>
<tr>
<td>19. 90 + 16 \div 8</td>
<td></td>
</tr>
<tr>
<td>20. 83 - 72 \div 6</td>
<td></td>
</tr>
<tr>
<td>21. 5 + 90 \times 7</td>
<td></td>
</tr>
<tr>
<td>22. 240 \div 20 + 15</td>
<td></td>
</tr>
<tr>
<td>23. 7 \times 80 - 160</td>
<td></td>
</tr>
</tbody>
</table>
Simplify. Record each step.

Example

\[
54 \div 6 + 20 \times 4 = \underline{89}
\]

1. **Step 1** \(54 \div 6 = 9\)
2. **Step 2** \(20 \times 4 = 80\)
3. **Step 3** \(9 + 80 = 89\)

24. \(40 - 6 + 10 \times 3 = \underline{40}\)

   1. **Step 1**
   2. **Step 2**
   3. **Step 3**

25. \(36 \div 6 - 25 \div 5 = \underline{17}\)

   1. **Step 1**
   2. **Step 2**
   3. **Step 3**

26. \(25 \times 4 - 36 \div 9 = \underline{92}\)

   1. **Step 1**
   2. **Step 2**
   3. **Step 3**
Simplify. State the order in which you performed the operations.

<table>
<thead>
<tr>
<th>Numeric Expression</th>
<th>Order of Operations Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 ÷ 3 + 14 × 2 = 48</td>
<td>+</td>
</tr>
</tbody>
</table>

27. \(20 - 5 \times 2 + 6\)

28. \(13 - 6 \times 2 + 12 ÷ 4\)

29. \(27 ÷ 3 + 40 \times 6\)

30. \(64 - 60 + 12 \times 3\)

31. \(42 ÷ 7 - 2 + 7\)

Simplify. Record each step.

**Example**

\[(15 - 11) \times 9 = 36\]

**Step 1** \(15 - 11 = 4\)

**Step 2** \(4 \times 9 = 36\)

32. \((11 + 5) ÷ 16 = \)
Simplify. Record each step.

33. \(63 - (9 \times 7) = \) _________

    **Step 1** ________________

    **Step 2** ________________

34. \(32 \div (14 + 2) = \) _________

    **Step 1** ________________

    **Step 2** ________________

Simplify. State the order in which you performed the operations.

<table>
<thead>
<tr>
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<th>Order of Operations Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First</td>
</tr>
<tr>
<td>(3 \times (72 \div 8) = 27)</td>
<td>(\div)</td>
</tr>
<tr>
<td>35. ((40 \div 5) \times 11)</td>
<td></td>
</tr>
<tr>
<td>36. ((36 - 15) \times 2)</td>
<td></td>
</tr>
<tr>
<td>37. (36 - (15 \times 2))</td>
<td></td>
</tr>
<tr>
<td>38. ((62 + 10) \div 6)</td>
<td></td>
</tr>
<tr>
<td>39. (70 \div (16 - 9))</td>
<td></td>
</tr>
</tbody>
</table>
Simplify. Record each step.

Example

\[ 21 + (12 + 6) ÷ 3 = 27 \]

Step 1 \( 12 + 6 = 18 \)

Step 2 \( 18 ÷ 3 = 6 \)

Step 3 \( 21 + 6 = 27 \)

40. \( 7 + (8 - 4) × 10 = \)

Step 1 \( \)

Step 2 \( \)

Step 3 \( \)

41. \( 32 ÷ (7 + 1) × 9 - 5 = \)

Step 1 \( \)

Step 2 \( \)

Step 3 \( \)

Step 4 \( \)
Simplify. Record each step.

42. \((47 + 12) - 10 \div 5 \times 3 = \) 

Step 1 ________________________

Step 2 ________________________

Step 3 ________________________

Step 4 ________________________

Simplify. State the order in which you performed the operations.

<table>
<thead>
<tr>
<th>Numeric Expression</th>
<th>Order of Operations Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>(100 + (720 + 200) \div 2) (= 560)</td>
<td>(+)</td>
</tr>
<tr>
<td>(24 \times 5 - (125 - 80))</td>
<td></td>
</tr>
<tr>
<td>(360 \div (98 + 22) \times 19 - 30)</td>
<td></td>
</tr>
<tr>
<td>(11 + (34 + 16) \div 5)</td>
<td></td>
</tr>
<tr>
<td>(7 \times 6 - (18 - 6))</td>
<td></td>
</tr>
<tr>
<td>(21 \div (2 + 5) \times 12 - 8)</td>
<td></td>
</tr>
</tbody>
</table>
Simplify. Record each step.

Example

\[\{50 - [13 - (8 + 3)]\} ÷ 4 = 12\]

Step 1 \[8 + 3 = 11\]

Step 2 \[13 - 11 = 2\]

Step 3 \[50 - 2 = 48\]

Step 4 \[48 ÷ 4 = 12\]

48. \[19 - [(18 + 2) - 6] = \]

Step 1

Step 2

Step 3

49. \[[(27 ÷ 9) - 3] + 30 = \]

Step 1

Step 2

Step 3
50. \[ 11 + \{18 - [15 \div (20 - 15)]\} = \] 

Step 1 ________________

Step 2 ________________

Step 3 ________________

Step 4 ________________

51. \[ \{[(100 \div 4) \times (3 + 3)] \div 50\} + 9 = \] 

Step 1 ________________

Step 2 ________________

Step 3 ________________

Step 4 ________________

Step 5 ________________

52. \[ (108 - 86) + \{120 \div [20 - (10 + 6)]\} = \] 

Step 1 ________________

Step 2 ________________

Step 3 ________________

Step 4 ________________

Step 5 ________________
Practice 8  Real-World Problems: Multiplication and Division

Solve. Show your work.

1. Rafael has 118 baseball cards arranged in an album. Each page of the album can hold 9 cards. How many pages are full and how many cards are on the last page?

2. A ski club had 146 members. Each member paid $30 a month for training fees. How much did the club collect in fees for the year?
Solve. Show your work.

3. A farmer collects 1,250 eggs on a morning. She puts 30 eggs on each tray. How many egg trays does she need to hold all the eggs?

4. At a supermarket, pineapple juice sells at $1 per pint (16 ounces). Greg wants to buy eighteen 40-ounce cans of pineapple juice from the supermarket. How much does he have to pay altogether?
Solve. Show your work.

5. A charitable organization spends $4,500 giving out food vouchers to families.
   a. Each family receives one voucher worth $25. How many families are there?
   
   b. Each voucher will be worth $32 next year. How much more money will the charity need next year?

6. A group of tourists visits an art museum. The admission is $13 for each adult and $7 for each child. There are 10 adults and 18 children in the group. How much do they pay altogether?
Solve. Show your work.

7. The length of a rectangular board is 10 centimeters longer than its width. The width of the board is 26 centimeters. The board is cut into 9 equal pieces.

   a. What is the area of each piece?

   b. What are the possible dimensions of each piece? (Take the dimensions to be whole numbers.)

8. There are 912 yellow chairs and blue chairs altogether in an auditorium. The blue chairs are arranged in 36 rows with 12 chairs in each row. The yellow chairs are arranged in rows of 20. How many rows of yellow chairs are there?
Solve. Show your work.

9. The table shows the wages of workers in Samantha’s company. Sean works from Tuesday through Sunday each week. How much does he earn in 1 week?

<table>
<thead>
<tr>
<th>Weekdays</th>
<th>$112 per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday and Sunday</td>
<td>$168 per day</td>
</tr>
</tbody>
</table>
Solve. Show your work.

10. The table shows the charges at a parking garage.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Hour</strong></td>
<td>$2</td>
</tr>
<tr>
<td><strong>Every Additional (\frac{1}{2}) Hour</strong></td>
<td>$1</td>
</tr>
</tbody>
</table>

a. Sharona parked her car at the garage from 9:30 A.M. to 11:00 A.M. on the same day. How much did she have to pay?

b. Daryll parked his car there from 9 A.M. to 12:30 P.M. on the same day. How much did he have to pay?
Practice 9  Real-World Problems: Multiplication and Division

Solve. Use any strategy.

1. Hannah and Francine have $120. Hannah and Peter have $230. Peter has 6 times as much money as Francine. How much money does Hannah have?

2. Larry is 10 years old and his sister is 7 years old. In how many years’ time will their total age be 25 years?
Solve. Use any strategy.

3. A box of chalk and 2 staplers cost $10. Three boxes of chalk and 2 staplers cost $18. Find the total cost of 1 box of chalk and 1 stapler.
Solve. Use any strategy.

4. Sally and Marta had the same number of postcards. After Sally sold 18 of her postcards, Marta had 4 times as many postcards as Sally. How many postcards did each girl have to begin with?
Solve. Use any strategy.

5. A basket with 12 apples has a mass of 3,105 grams. The same basket with 7 apples has a mass of 1,980 grams. Each apple has the same mass. What is the mass of the basket?
1. Kelly has a 370-page sketch book. She wants to allocate an equal number of pages for making sketches to each month of the year. She uses division to find the number of pages she can possibly allocate to each month, and the number of pages she will have left over. She works out the division like this:

\[
\begin{array}{c}
30 \\
\hline
12 \quad 370 \\
360 \\
\hline
10 \\
\end{array}
\]

Which part of the answer tells the number of pages that Kelly can possibly allocate to each month?
Which part tells the number of pages left over?
2. Mark was asked to simplify the numeric expression $6 + 4 \times 2$. He worked out the steps like this:

\[
6 + 4 \times 2 = 10 \times 2 \\
= 20
\]

Is he correct? Explain why.

3. Look at the following problem and the solution given by a student: Abel, Belle, and Cindy have $408 altogether. Belle has $7 more than Cindy and $5 more than Abel. How much does Abel have?

\[
\begin{align*}
\text{Abel} & \hspace{1cm} ? \\
\text{Belle} & \hspace{1cm} $408 \\
\text{Cindy} & \hspace{1cm} $7
\end{align*}
\]

$408 - $7 - $5 = $396

$396 \div 3 = $132

$132 + $5 = $137

What was the mistake made? What should the correct answer be?
Put On Your Thinking Cap!

Challenging Practice

Solve. Use any strategy.

1. A sticker costs 15¢, and a packet of 8 similar stickers costs $1. Clement buys 37 stickers. What is the least amount of money that Clement spends on the stickers?

2. 40 members of a parents’ organization are making candles to raise money. 1 member drops out and the rest have to make 3 more candles each to make up. Each member makes the same number of candles. How many candles do they make altogether?
Solve. Use any strategy.

3. Mr. Thomas puts up fence posts from one end of a field to the other, equal distances apart. There are 27 posts. The width of each post is 10 centimeters. The distance between two posts is 30 meters. Find the length of the fence.

4. Kirsten has 64 coins in her piggy bank. She has $9.25 in dimes and quarters. How many dimes and how many quarters does she have?
Put On Your Thinking Cap!

Problem Solving

Solve. Use any strategy.

1. Darcy, Jason, and Maria share $268. Jason has $20 more than Darcy and Maria has twice as much money as Jason. How much money do Darcy and Jason have altogether?

2. Juan and Rachel have the same number of marbles. Rachel gives away 10 marbles and Juan gives away 22 marbles. Rachel then has 3 times as many marbles as Juan. How many marbles did each of them have at first?
Solve. Use any strategy.

3. Gerry had a total of 30 pens and pencils. He decided to trade with his friends all his pens for pencils. If he traded every pen for 2 pencils, he would have 48 pencils in all. How many pens and how many pencils did he have before the trade?