CHAPTER 3 Whole Number Multiplication and Division
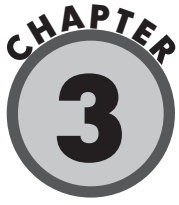
Lesson 3.1 Multiplying by a 1-Digit Number

Solve.

1. Multiply 323 by 3.

$3 \times 3 =$

$20 \times 3 =$

$300 \times 3 =$

$323 \times 3 = 3 \times 3 + 20 \times 3 + 300 \times 3 =$ _____

2. Multiply 746 by 8.

$6 \times 8 =$

$40 \times 8 =$

$700 \times 8 =$

$746 \times 8 = 6 \times 8 + 40 \times 8 + 700 \times 8 =$ _____

3. Multiply 586 by 9.

$6 \times 9 =$

$80 \times 9 =$

$500 \times 9 =$

$586 \times 9 = 6 \times 9 + 80 \times 9 + 500 \times 9 =$ _____

Multiply.

4.
```
      2   4   6
  ×           3
_____
```

5.
```
      3   7   5
  ×           4
_____
```

6.
```
      4   2   8
  ×           5
_____
```

7.
```
      5   3   7
  ×           6
_____
```

8.
```
      3   8   7
  ×           7
_____
```

9.
```
      6   3   9
  ×           7
_____
```

10.
```
      4   6   7
  ×           8
_____
```

11.
```
      2   9   4
  ×           8
_____
```

12.
```
      5   6   3
  ×           9
_____
```

13.
```
      4   8   7
  ×           9
_____
```

Lesson 3.2   Multiplying by a 2-Digit Number

Write the missing numbers.

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1. $48 \times 10 =$ _____

2. $89 \times 10 =$ _____

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3. $23 \times 40 = 23 \times$ _____ tens

   $=$ _____ tens

   $=$ _____

4. $35 \times 30 = 35 \times$ _____ tens

   $=$ _____ tens

   $=$ _____

---

5. $419 \times 50 = 419 \times$ _____ tens

   $=$ _____ tens

   $=$ _____

6. $627 \times 20 = 627 \times$ _____ tens

   $=$ _____ tens

   $=$ _____

---

7. $536 \times 60 = 536 \times$ ____ $\times 10$

   $=$ _____ $\times 10$

   $=$ _____

8. $648 \times 60 = 648 \times$ ____ $\times 10$

   $=$ _____ $\times 10$

   $=$ _____

Find each product.

9. $87 \times 7 =$ _____ $87 \times 70 =$ _____	**10.** $96 \times 7 =$ _____ $96 \times 70 =$ _____
11. $356 \times 8 =$ _____ $356 \times 80 =$ _____	**12.** $267 \times 9 =$ _____ $267 \times 90 =$ _____

Estimate each product.

> *Example*
>
> 52×23 is about $\underline{50} \times \underline{20}$.
> Estimate: $\underline{50 \times 20 = 1{,}000}$

13. 87×39 is about _____ $\times$ _____.

     Estimate: _____

14. 369×47 is about _____ $\times$ _____.

     Estimate: _____

Find each product.

15. $37 \times 5 =$

$37 \times 40 =$

$$
\begin{array}{ccc}
& 3 & 7 \\
\times & 4 & 5 \\
\hline
\end{array}
$$

$37 \times 45 =$ _____

16. $56 \times 4 =$

$56 \times 30 =$

$$
\begin{array}{ccc}
& 5 & 6 \\
\times & 3 & 4 \\
\hline
\end{array}
$$

$56 \times 34 =$ _____

17. $63 \times 9 =$

$63 \times 20 =$

$$
\begin{array}{ccc}
& 6 & 3 \\
\times & 2 & 9 \\
\hline
\end{array}
$$

$63 \times 29 =$ _____

18. $74 \times 2 =$

$74 \times 30 =$

$$
\begin{array}{ccc}
& 7 & 4 \\
\times & 3 & 2 \\
\hline
\end{array}
$$

$74 \times 32 =$ _____

Multiply. Then estimate to check that your answers are reasonable.

19.
```
      9   8
  ×   7   6
_____
```

20.
```
      5   4
  ×   9   7
_____
```

21.
```
    3   6   4
  ×     2   9
_____
```

22.
```
    5   2   8
  ×     4   6
_____
```

Multiply. Then estimate to check that your answers are reasonable.

23.
```
      3   9   2
  ×       3   0
```

24.
```
      4   3   9
  ×       7   2
```

25.
```
      7   3   4
  ×       8   6
```

26.
```
      8   5   6
  ×       9   4
```

Lesson 3.3   Modeling Division with Regrouping

Complete the steps.

1.

$$5\overline{)7\quad4\quad5}$$

$$5\overline{)7\quad4\quad5}$$

$$5\overline{)7\quad4\quad5}$$

with: □ 4 □

$$5\overline{)7\quad4\quad5}$$

with: □ 4 □ and 5

2.

$$6\overline{)9\quad8\quad4}$$

$$6\overline{)9\quad8\quad4}$$

$$6\overline{)9\quad8\quad4}$$

with: □ 8 □

$$6\overline{)9\quad8\quad4}$$

with: □ 8 □ and 4

Divide.

3. 2$\overline{)7\quad 2\quad 8}$

4. 3$\overline{)7\quad 3\quad 5}$

5. 4$\overline{)9\quad 4\quad 8}$

6. 5$\overline{)9\quad 3\quad 0}$

7. 6$\overline{)6\quad 5\quad 4}$

8. 7$\overline{)9\quad 7\quad 3}$

9. 8$\overline{)9\quad 8\quad 4}$

10. 9$\overline{)9\quad 5\quad 4}$

Lesson 3.4   Dividing by a 1-Digit Number

Fill in the blanks to find each quotient.

1. $6{,}400 \div 8 =$ _____ hundreds $\div$ 8

$=$ _____ hundreds

$=$ _____

2. $6{,}300 \div 9 =$ _____ hundreds $\div$ 9

$=$ _____ hundreds

$=$ _____

3. $9{,}000 \div 3 =$ _____ thousands $\div$ 3

$=$ _____ thousands

$=$ _____

Estimate each quotient.

4. $78 \div 4$ is about _____ $\div$ 4.   Estimate: _____

5. $397 \div 5$ is about _____ $\div$ 5.   Estimate: _____

6. $7{,}425 \div 5$ is about _____ $\div$ 5.   Estimate: _____

7. $6{,}726 \div 6$ is about _____ $\div$ 6.   Estimate: _____

Divide.

8.   4$\overline{)5,\ \ 0\ \ \ 5\ \ \ 2}$

9.   6$\overline{)6,\ \ 0\ \ \ 7\ \ \ 8}$

10.   7$\overline{)1,\ \ 9\ \ \ 8\ \ \ 8}$

11.   9$\overline{)5,\ \ 0\ \ \ 5\ \ \ 8}$

12.   8$\overline{)3,\ \ 9\ \ \ 7\ \ \ 6}$

13.   5$\overline{)4,\ \ 8\ \ \ 4\ \ \ 0}$

**Find each quotient. Then estimate to check that your answers
are reasonable.**

14. $1{,}748 \div 7 =$ _____ R _____

15. $3{,}871 \div 4 =$ _____ R _____

16. $3{,}014 \div 8 =$ _____ R _____

17. $2{,}518 \div 9 =$ _____ R _____

Find each quotient. Then estimate to check that your answers are reasonable.

18. 5,453 ÷ 9 = _____ R _____

19. 7,218 ÷ 8 = _____ R _____

20. 6,499 ÷ 7 = _____ R _____

21. 2,781 ÷ 5 = _____ R _____

Lesson 3.5   Real-World Problems

1.   Sharon buys 18 boxes of cupcakes. There are 24 cupcakes in each box.
    a.   How many cupcakes does Sharon buy?

    b.   Sharon repacks all the cupcakes in boxes of 8 cupcakes each.
        How many boxes are needed?

2.   There are 35 rows of chairs in a room. Each row has 42 chairs. Some
    workers remove 120 chairs from the room. How many chairs are there in
    the room now?

3. A digital camera costs $699. A retailer sells 38 cameras.
How much does he collect altogether?

4. A bakery sells 369 banana muffins each day. It sells 4 times as many
blueberry muffins as banana muffins each day. How many blueberry muffins
are sold every day?

5. A factory produces 1,899 toy cars each day. How many toy cars does it produce in 7 days?

6. Ms. Marquez divides 3,440 beads equally among 6 groups of students for a crafts project.
   a. How many beads does each group have?

   b. How many beads are left over?

7.   2,255 stamps are divided equally among 6 post offices.
   a.   How many stamps does each post office receive?

   b.   How many stamps are left over?

8.   Each pair of in-line skates costs $56.
   a.   How much does a store have to pay for 39 pairs of in-line skates?

   b.   A store sells each pair of in-line skates for $72. What is the profit that
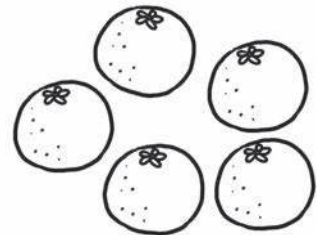   the store makes on the 39 pairs of in-line skates?

9.   Hannah gave $68 to charity. Hannah's mother gave 25 times as much as Hannah. How much did they give altogether?

10.   A fruit seller has 2,400 oranges. He throws away 52 rotten oranges and packs the remainder equally into 9 boxes.

    a.   How many oranges are in each box?

    b.   How many oranges are unpacked?

11.   There are 4 times as many children as adults at a theater. There are
475 adults. How many people are at the theater altogether?

12.   A nature club has 37 members. Each member receives 15 fish to put
into an aquarium. If 20 of the total number of fish are put into a fishbowl
instead, how many fish are put into the aquarium?

13. Mr. Joseph's salary is $3,650. He spends $1,610 on rent. He divides the rest of his salary into 3 parts for his other monthly expenses. How much money is in each part?

14. Diana mixes 1,543 milliliters of orange concentrate with 932 milliliters of water to make orange juice. She then pours the mixture equally into 9 glasses. How much orange juice is in each glass?
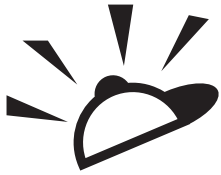
15. Carlene saves $y. Sharon saves 3 times as much money as Carlene. Jason saves $50 more than Sharon. How much do they save altogether?

16. There are 200 chairs in a school. The workers arrange them into rows of 12 chairs. There are *w* chairs left over. How many rows are there?

Put On Your Thinking Cap!

1. Sarah has 275 red beads and 3 times as many blue beads. She uses a total of 156 beads to make a bracelet. How many beads are left?

2. Factory A produces 420 footballs a day. Factory B produces 90 fewer footballs than Factory A each day. How many footballs do the two factories produce in 28 days?

3. James and Sam saved $392 altogether. Sam had 3 times as much money as James. Sam spends $38 on a pair of shoes. How much money does Sam have now?

4.   Mr. Roberts inherits some money. He keeps $1,800 for himself,
           gives $980 to his wife, and divides the rest among his 6 children.
           Each of his children receives $89. How much did Mr. Roberts inherit?

5.   Mrs. Rodin buys a table and 6 chairs for $1,233. The table costs
           $750 more than each chair. How much does Mrs. Rodin pay
           for the 6 chairs?

6.   Ms. Rao buys a computer, a printer, and a scanner for $2,543.
           The computer costs $1,502 more than the printer. The printer costs
           $123 more than the scanner. How much does Ms. Rao pay
           for the computer?

7. Use each of the digits 2, 4, 7, 8, and 9 only once.
Arrange the digits in these boxes to get
a. the greatest possible product.

$$\begin{array}{c}\boxed{}\,\boxed{}\,\boxed{} \\ \times \quad \boxed{}\,\boxed{} \\ \hline \end{array}$$

b. the least possible product.

$$\begin{array}{c}\boxed{}\,\boxed{}\,\boxed{} \\ \times \quad \boxed{}\,\boxed{} \\ \hline \end{array}$$

8. Mr. Garcia's age this year is a multiple of 7. In 3 years, his age will be
a multiple of 5. He is more than 20 years old but less than 80 years old.
How old will Mr. Garcia be in 6 years?

9.   At a bicycle shop, a bicycle costs $49 and a tricycle costs $27.
An after-school club buys bicycles and tricycles with a total of 39 wheels.
The club buys 2 more bicycles than tricycles.

   a.   How many bicycles does the club buy?

   b.   How much money does the club pay for the bicycles?