Practice 1  Real-World Problems: Multiplication

Solve. Use bar models to help you.

Example

Carlos bakes 42 muffins.
Kim bakes twice as many muffins as Carlos.
How many muffins does Kim bake?

\[
42 \times 2 = 84
\]

Kim bakes 84 muffins.

1. Mrs. Bently pays $95 for a new bed.
Mrs. Lee pays three times as much as Mrs. Bently for a new bed.
How much does Mrs. Lee pay for the new bed?

\[
\begin{align*}
1 \text{ unit} & \rightarrow \$\underline{\text{_______}} \\
3 \text{ units} & \rightarrow \$\underline{\text{_______}} \times 3 \\
& = \$\underline{\text{_______}}
\end{align*}
\]

Mrs. Lee pays $\underline{\text{_______}}$ for a new bed.
Solve. Draw bar models to help you.

2. Mr. Suarez drove 98 miles on his vacation this year. He drove 4 times that distance last year. How far did Mr. Suarez drive on his vacation last year?

\[
\text{Mr. Suarez drove } \underline{392} \text{ miles on his vacation last year.}
\]

3. School A collects 76 bundles of newspaper for recycling. School B collects 5 times the number of bundles as School A. How many bundles of newspaper does School B collect?
Practice 2  Real-World Problems: Two-Step Problems with Multiplication

Solve. Use bar models to help you.

Example

6 boys and 4 girls are in the chorus. Each chorus member has 8 concert tickets to sell.

a. How many members are in the chorus?

There are 10 members in the chorus.

b. How many concert tickets do they have in all?

They have 80 concert tickets in all.
Solve. Use the letters \(a\) and \(b\) to represent the unknown numbers. Use bar models to help you.

**Example**

There are 5 cookies in each box.
Jonathan packed 7 boxes of cookies.
He then had 29 cookies left.

**a.** How many cookies did Jonathan pack in the boxes in all?

\[
\begin{array}{c}
5 \text{ cookies} \\
\hline
7 \times 5 = \boxed{a}
\end{array}
\]

\[
\begin{array}{c}
\boxed{a} = 35
\end{array}
\]

Jonathan packed \boxed{35} cookies into the boxes.

**b.** How many cookies did Jonathan have at first?

\[
\begin{array}{c}
35 \text{ and } 29 \\
\hline
35 + 29 = \boxed{b}
\end{array}
\]

\[
\begin{array}{c}
\boxed{b} = 64
\end{array}
\]

Jonathan had \boxed{64} cookies at first.
Solve. Use the letters $c$ and $d$ to represent the unknown numbers. Draw bar models to help you.

1. Aileen has 8 packets of gingerbread men. There are 2 gingerbread men in each packet. Christine then gives Aileen another 61 gingerbread men.
   a. How many gingerbread men does Aileen have at first?

   

   

   Aileen has ________ gingerbread men at first.

   b. How many gingerbread men does Aileen have now?

   

   

   Aileen has ________ gingerbread men now.
Solve. Use the letters $h$ and $j$ to represent the unknown numbers. Draw bar models to help you.

2. There are 10 rows of chairs in a hall. Each row has 9 chairs. Peter painted 34 chairs in the hall yesterday. How many chairs in the hall are yet to be painted?

\[ \text{_______} \quad \bigcirc \quad \text{_______} = \quad \text{_______} \]

\[ \text{_______} = \quad \text{_______} \]

\[ \text{_______} \quad \bigcirc \quad \text{_______} = \quad \text{_______} \]

\[ \text{_______} = \quad \text{_______} \]

_______ chairs in the hall are yet to be painted.
Solve. Draw bar models to help you.

3. The school cafeteria sells 88 cartons of milk in a month. It sells 4 times as many bottles of water.
   
   a. How many bottles of water does the cafeteria sell?

   __________ __________ = __________
   
   The cafeteria sells __________ bottles of water.

   b. How many more bottles of water than cartons of milk does the cafeteria sell?

   __________ __________ = __________
   
   The cafeteria sells __________ more bottles of water than cartons of milk.
Solve. Draw bar models to help you.

4. A museum has 75 carvings in its collection. It has 10 more pieces of pottery than carvings. It has 3 times as many paintings as pieces of pottery. How many paintings does the museum have?

First, I __________.

Then, I __________.
Solve. Draw bar models to help you.

5. The second graders collect 65 books for a charity book drive. They put some of the books in boxes and have 25 books left to pack. The third graders have 4 times as many books in boxes. There are none left to pack. How many books do the third graders collect?

First, I ________.
Then, I ________.
Solve. Draw bar models to help you.

6. Mary has 215 pencils. She wants to put 30 pencils in 8 boxes. How many more pencils does she need?
Solve. Draw bar models to help you.

7. A bookcase has 5 shelves.
   Each shelf has 120 books.
   174 books are fiction.
   How many books are nonfiction?
Solve. Use bar models to help you.

8. Eunice reads 5 times as many pages of a story book as Peter. Kevin reads 30 more pages than Eunice. Peter reads 25 pages. How many pages does Kevin read?

Eunice reads \( ? \) pages of the story book.

Kevin reads \( ? \) pages of the story book.
9. Jill has 28 stickers.
Peggy has 4 times as many stickers as Jill.
Luis has 15 fewer stickers than Peggy.
How many stickers does Luis have?
Practice 3 Real-World Problems: Division

Solve. Use bar models to help you.

Example

May has 48 flowers. She needs 4 flowers to make each centerpiece. How many such centerpieces can she make?

\[
\begin{align*}
\text{48 flowers} & \\
\underline{4} & \underline{4} \\
? & \text{centerpieces}
\end{align*}
\]

\[
\frac{48}{4} = 12
\]

She can make 12 such centerpieces.

1. Mr. Morton shares 75 marbles equally among 5 children. How many marbles does each child get?

\[
\begin{align*}
\text{75 marbles} & \\
\underline{?}
\end{align*}
\]

\[
\frac{75}{5} = \underline{15}
\]

Each child gets 15 marbles.
Solve. Draw bar models to help you.

2. Cally works 63 hours in 7 weeks.
   She works an equal number of hours per week.
   How many hours does she work per week?

   \[
   \text{\underline{\hspace{2cm}}} \quad \text{\underline{\hspace{2cm}}} = \text{\underline{\hspace{2cm}}} \\
   \]

   She works \underline{\hspace{1cm}} hours per week.

3. Each shirt has 8 buttons.
   There are 72 buttons in all.
   How many shirts are there?

   \[
   \text{\underline{\hspace{2cm}}} \quad \text{\underline{\hspace{2cm}}} = \text{\underline{\hspace{2cm}}} \\
   \]

   There are \underline{\hspace{1cm}} shirts.
Solve. Use bar models to help you.

Example

Tina gives $85 to Aiden and Nick.
Aiden gets 4 times as much money as Nick.
How much does Nick get?

Aiden

Nick

$85

5 units → $ \frac{85}{5} = $17

1 unit

Nick gets $17.

4. Auntie Agnes makes 24 hotdogs.
She puts them on a round tray and a square tray.
Twice as many hotdogs are on the square tray as on the round tray.
How many more hotdogs are there on the square tray than on the round tray?

square tray

round tray

24 hotdogs

3 units

1 unit

= 

There are _________ more hotdogs on the square tray.
5. Elena takes 80 photos on her vacation.  
She takes 4 times as many photos as Luke.  
How many photos does Luke take?

6. Mr. King picked 54 peaches from his orchard.  
He picked 9 times as many peaches as Mr. Tang.  
How many peaches did Mr. Tang pick?
Practice 4  Real-World Problems: Two-Step Problems with Division

Solve. Use bar models to help you.

Example

Katie bakes 56 pineapple tarts. She packs 20 pineapple tarts into a plastic container. The remaining tarts are packed equally into 6 boxes.

a. How many pineapple tarts are packed into boxes?

\[
\begin{align*}
\text{56 tarts} & \quad \text{20 tarts} \\
\hline
56 & \quad - \quad 20 = 36
\end{align*}
\]

36 pineapple tarts are packed into boxes.

b. How many pineapple tarts are in each box?

\[
\begin{align*}
\text{36 tarts} & \quad \text{6} \\
\hline
36 & \quad \div \quad 6 = 6
\end{align*}
\]

There are 6 pineapple tarts in each box.
Solve. Use bar models to help you.

1. A fruit seller has 64 oranges in some bags. Each bag has 8 oranges. She sells the oranges for $2 per bag. How much does she sell all the oranges for?

There are ______ bags of oranges.

First, I ________.
Then, I ________.

She sells all the oranges for $_______.

64 oranges 8 ? bags of oranges

8

$2

$?
Solve. Draw bar models to help you.

2. Alex has 14 pencils.
   Lance has 4 times as many pencils as Alex.
   Lance’s pencils are shared equally among 2 children.
   How many pencils does each child get?

   First, I __________.
   Then, I __________.

3. Richard has 90 pennies.
   He keeps 10 pennies and divides the rest of the pennies equally among his 4 sisters.
   How many pennies does each sister get?

   First, I __________.
   Then, I __________.
Solve. Draw bar models to help you.

4. A baker makes 32 rolls in the morning. He makes 64 rolls in the afternoon. He packs all the rolls equally into 4 boxes. How many rolls does each box have?
5. Marcus collects 14 stamps each month. Wayne collects 19 stamps each month. How many months does Wayne take to collect 65 more stamps than Marcus?
Solve. **Use the letters** \( a \) **and** \( b \) **to represent the unknown numbers.**

**Example**

Ms. Butler made 38 bookmarks for some students.
Mr. Fujita made 42 more bookmarks.
They distributed the bookmarks equally among 8 children.

**a.** How many bookmarks did they make altogether?

\[
38 \text{ bookmarks} + 42 \text{ bookmarks} = \boxed{a}
\]

\[
a = 80
\]

They made \( \boxed{80} \) bookmarks altogether.

**b.** How many bookmarks did each child receive?

\[
80 \div 8 = \boxed{b}
\]

\[
b = 10
\]

Each child received \( \boxed{10} \) bookmarks.
Mrs. Perez baked 99 scones. She gave 78 scones to her neighbors. She then gave the rest to some girls. Each girl received 3 scones.

**a.** How many scones were left after Mrs. Perez gave scones to her neighbors?

Mrs. Perez had ______ scones left.

**b.** How many girls received 3 scones each?

_________ girls received 3 scones each.
Solve. Draw bar models to help you.

7. Mary Anne bought 29 storybooks last week. She bought another 16 storybooks this week. She wanted to pack the storybooks into bags of 5 storybooks each. How many bags did Mary Anne need to pack all the storybooks?

Mary Anne needed ________ bags for the storybooks.
Math Journal

Look at the bar models, number sentences, and the answer statement. Write a question that matches this problem.

1. Both doctors see 267 patients.

   \[
   \begin{align*}
   \text{Dr. Bob} & : 89 \text{ patients} \\
   \text{Dr. Jane} & : ? \\
   \text{Method 1} & : 89 \times 2 = 178 \\
   & 178 + 89 = 267 \\
   \text{Method 2} & : 3 \times 89 = 89 \times 3 \\
   & 1 \text{ unit} \rightarrow 89 \\
   & 3 \text{ units} \rightarrow 3 \times 89 = 267
   \end{align*}
   \]

   Both doctors see 267 patients.

My question:
Look at the bar models and the answer statement. Write a question that matches this problem and show two possible methods for solving the word problem.

2. Both bakers bake 147 bread rolls.

My question:

My methods:
Put On Your Thinking Cap!

Challenging Practice

Solve. Draw bar models to help you.

1. Timmy and Pedro have 24 trading cards altogether. Pedro has 10 fewer cards than Timmy. After giving 5 cards to Pedro, both Timmy and Pedro have an equal number of cards. How many trading cards does Pedro have at first?
Put On Your Thinking Cap!

Problem Solving

Solve. Use bar models to help you.

2. Johanna has some chicken nuggets and 6 sticks. She puts 3 chicken nuggets on each stick. She has 2 chicken nuggets left. If she puts 4 chicken nuggets on each stick, how many chicken nuggets will be left? How many sticks will she need?