

## Place-Value Mystery

Find the number that makes each statement true.

1.  $\frac{1}{10}$  of 3,000 is 10 times as much as \_\_\_\_\_.
2.  $\frac{1}{10}$  of \_\_\_\_\_ is 10 times as much as 8.
3.  $\frac{1}{10}$  of 50,000 is 10 times as much as \_\_\_\_\_.
4.  $\frac{1}{10}$  of 400,000 is 10 times as much as \_\_\_\_\_.
5. 10 times as much as \_\_\_\_\_ is  $\frac{1}{10}$  of 900.
6. 10 times as much as \_\_\_\_\_ is  $\frac{1}{10}$  of 60,000.
7. 10 times as much as 70 is  $\frac{1}{10}$  of \_\_\_\_\_.
8. 10 times as much as 2,000 is  $\frac{1}{10}$  of \_\_\_\_\_.

9. **Write Math** Explain how you solved Exercise 8.

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## Place-Value Match

Match the standard form of the number given in Column A with either the word form or the expanded form of the number in Column B.

### Column A

### Column B

- |     |             |                        |
|-----|-------------|------------------------|
| 1.  | 900,000     | thirty million         |
| 2.  | 8,000,000   | $5 \times 1,000,000$   |
| 3.  | 30,000,000  | six hundred million    |
| 4.  | 2,000,000   | eight hundred thousand |
| 5.  | 100,000     | $9 \times 100,000$     |
| 6.  | 5,000,000   | three million          |
| 7.  | 60,000,000  | sixty million          |
| 8.  | 7,000,000   | $2 \times 1,000,000$   |
| 9.  | 800,000     | $5 \times 10,000,000$  |
| 10. | 300,000     | $3 \times 100,000$     |
| 11. | 1,000,000   | seven million          |
| 12. | 50,000,000  | one hundred thousand   |
| 13. | 600,000,000 | one million            |
| 14. | 3,000,000   | eight million          |

15.  Explain the method you used to match the standard form of a number to either its word form or its expanded form.

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## Using Properties of Operations

First, use one of the properties shown below to complete each equation. Then, match each equation to its property by writing the equation on the line below the property.

$1 \times 17 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \times 11 = 13 \times (8 \times 11)$

$9 \times (5 + 3) = \underline{\hspace{2cm}} + (9 \times 3)$

$\underline{\hspace{2cm}} + 0 = 49$

$\underline{\hspace{2cm}} \times 29 = 29 \times 3$

$(7 + 6) + \underline{\hspace{2cm}} = 7 + (6 + 25)$

$51 + \underline{\hspace{2cm}} = 39 + 51$

|  |   |
|--|---|
| <b>Associative Property of Addition</b><br>_____       | <b>Identity Property of Multiplication</b><br>_____ |
| <b>Associative Property of Multiplication</b><br>_____ | <b>Commutative Property of Addition</b><br>_____    |
| <b>Commutative Property of Multiplication</b><br>_____ | <b>Distributive Property</b><br>_____               |
| <b>Identity Property of Addition</b><br>_____          |   |

1. **Stretch Your Thinking** Use the Distributive Property to rewrite and find  $4 \times (25 + 4)$ .

\_\_\_\_\_

2.  **Write Math** Explain how the Associative Property of Addition is similar to the Associative Property of Multiplication.

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

## Powers and Words

Find the value. Then write the value in word form.

1.  $70 \times 10^3 =$  \_\_\_\_\_

Word form: \_\_\_\_\_

2.  $35 \times 10^2 =$  \_\_\_\_\_

Word form: \_\_\_\_\_

3.  $14 \times 10^3 =$  \_\_\_\_\_

Word form: \_\_\_\_\_

4.  $60 \times 10^7 =$  \_\_\_\_\_

Word form: \_\_\_\_\_

5.  $51 \times 10^4 =$  \_\_\_\_\_

Word form: \_\_\_\_\_

6.  $24 \times 10^5 =$  \_\_\_\_\_

Word form: \_\_\_\_\_

7.  $86 \times 10^6 =$  \_\_\_\_\_

Word form: \_\_\_\_\_

8.  $19 \times 10^7 =$  \_\_\_\_\_

Word form: \_\_\_\_\_

9. **Stretch Your Thinking** What is another way to write the number in Exercise 1 using a whole number and a power of 10?

\_\_\_\_\_

## Product Pattern

Look at the pattern of the products below.

$$11 \times 11 = 121$$

$$12 \times 11 = 132$$

$$13 \times 11 = 143$$

$$14 \times 11 = 154$$

Use the pattern above to find the product.

1.  $15 \times 11 =$  \_\_\_\_\_

2.  $16 \times 11 =$  \_\_\_\_\_

3.  $17 \times 11 =$  \_\_\_\_\_

4.  $18 \times 11 =$  \_\_\_\_\_

5.  $150 \times 11 =$  \_\_\_\_\_

6.  $120 \times 11 =$  \_\_\_\_\_

7.  $170 \times 11 =$  \_\_\_\_\_

8.  $140 \times 11 =$  \_\_\_\_\_

**9. Stretch Your Thinking** How does the product  $110 \times n$  compare to the product  $11 \times n$ ? (Hint:  $n$  represents any number.)

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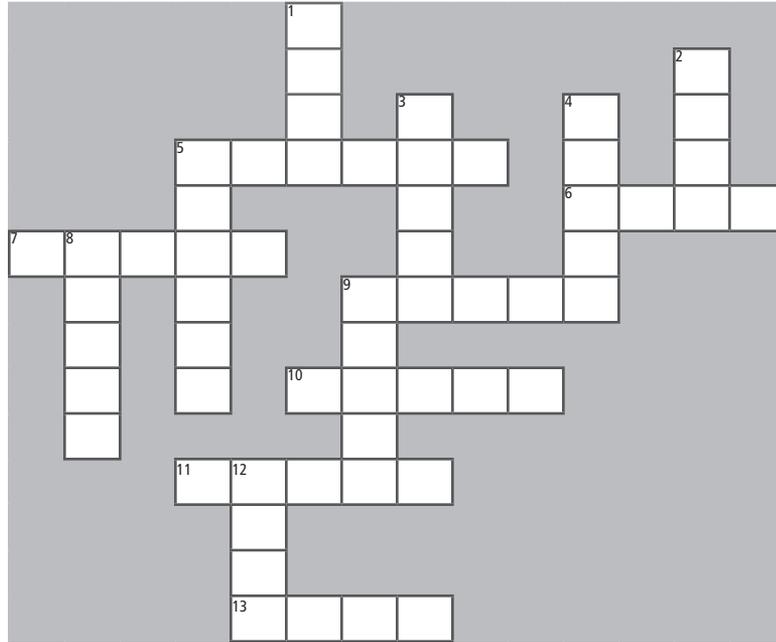
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# Multiplication Number Puzzle

Use the clues to complete the puzzle.



### Down

1.  $856 \times 9$  \_\_\_\_\_
2.  $847 \times 6$  \_\_\_\_\_
3.  $5,082 \times 3$  \_\_\_\_\_
4.  $7,028 \times 6$  \_\_\_\_\_
5.  $24,162 \times 8$  \_\_\_\_\_
8.  $2,127 \times 6$  \_\_\_\_\_
9.  $3,289 \times 5$  \_\_\_\_\_
12.  $601 \times 6$  \_\_\_\_\_

### Across

5.  $12,762 \times 9$  \_\_\_\_\_
6.  $287 \times 6$  \_\_\_\_\_
7.  $1,326 \times 9$  \_\_\_\_\_
9.  $4,027 \times 4$  \_\_\_\_\_
10.  $4,027 \times 6$  \_\_\_\_\_
11.  $7,028 \times 9$  \_\_\_\_\_
13.  $1,722 \times 4$  \_\_\_\_\_

- 14. Stretch Your Thinking** Write a different clue that has the same product as  $1,326 \times 9$ .
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# Unknown Digits Multiplication

Find the unknown digits.

1.

$$\begin{array}{r}
 \square 4 \\
 \times 8 \square \\
 \hline
 \square \square \square \\
 + 2720 \\
 \hline
 2,958
 \end{array}$$

2.

$$\begin{array}{r}
 65 \\
 \times 7 \square \\
 \hline
 5 \square 5 \\
 + 4550 \\
 \hline
 5, \square 35
 \end{array}$$

3.

$$\begin{array}{r}
 9 \square \\
 \times 24 \\
 \hline
 384 \\
 + 1 \square 20 \\
 \hline
 2, \square 04
 \end{array}$$

4.

$$\begin{array}{r}
 8 \square \\
 \times 68 \\
 \hline
 6 \square 6 \\
 + \square \square 20 \\
 \hline
 5,576
 \end{array}$$

5.

$$\begin{array}{r}
 53 \square \\
 \times \square 7 \\
 \hline
 37 \square 7 \\
 + 21 \square \square 0 \\
 \hline
 \square 4,9 \square \square
 \end{array}$$

6.

$$\begin{array}{r}
 246 \\
 \times \square 3 \\
 \hline
 7 \square \square \\
 + 196 \square 0 \\
 \hline
 \square \square, \square \square \square
 \end{array}$$

7. **Stretch Your Thinking** What two-digit number multiplied by itself has the product 2,025? **Explain** how you found your answer.

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Name \_\_\_\_\_

## Number Relationships

Find the unknown number in the group to make related multiplication and division sentences. Write the multiplication and division sentences.

1.  $4, ?, 68$

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2.  $5, ?, 65$

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3.  $4, ?, 52$

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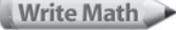
4.  $6, ?, 78$

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5.  Write Math Describe how the number sentences in each exercise are related.

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6. **Stretch Your Thinking** How can you use inverse operations to write the related multiplication and division sentences?

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Name \_\_\_\_\_

## Simply Put

**Solve.** You may find it helpful to use the strategy *solve a simpler problem*.

1. Sal's Pizza uses 720 pounds of flour in 4 weeks. Sal's is open 6 days a week and uses the same amount of flour each day. How much flour does Sal's Pizza use in 1 day?

\_\_\_\_\_

3. Dan runs Freddy's Deluxe Car Wash. Nine workers wash a total of 369 cars in one week. Suppose the workers all wash the same number of cars. How many cars does each worker wash that week?

\_\_\_\_\_

5. Dr. Barker and two other dentists work in the same office. In one day, the three dentists saw a total of 51 patients. Suppose each dentist saw the same number of patients. How many patients did each dentist see?

\_\_\_\_\_

2. In one 8-hour day, 5 barbers gave a total of 120 haircuts. The barbers gave the same number of haircuts per hour. How many haircuts did each barber give per hour?

\_\_\_\_\_

4. Ali sells tomatoes to 9 restaurants. Each restaurant buys the same amount of tomatoes each day. Suppose Ali sells 162 pounds of tomatoes one day. How many pounds does she sell to each restaurant?

\_\_\_\_\_

6. Micah uses 2 bags of birdseed to fill up 4 bird feeders. How many bags will he need to fill up 40 feeders?

\_\_\_\_\_

7. **Stretch Your Thinking** When is it helpful to use simpler numbers to solve a problem?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

# Shopping Expressions

The table shows the prices for certain items at a supermarket. Use the information in the table to write words that match each of the expressions below.

| Supermarket Prices |       |
|--------------------|-------|
| Item               | Price |
| Loaf of bread      | \$3   |
| Carton of eggs     | \$2   |
| Box of cereal      | \$4   |
| Pound of cheese    | \$5   |
| Gallon of milk     | \$3   |
| Can of tuna fish   | \$2   |

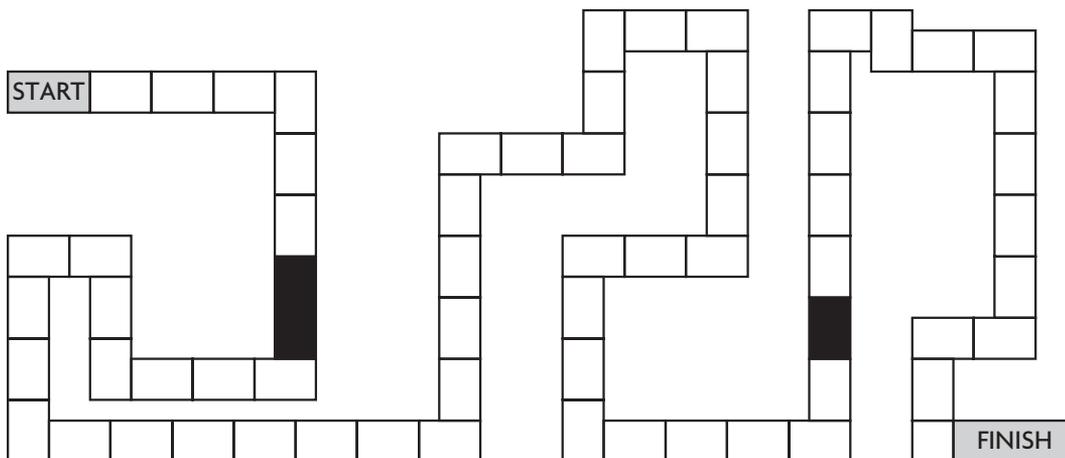
Write a word problem for each expression. The first word problem has been written for you.

|  |   |
|--|---|
| <p><b>1.</b> <math>7 - 3</math></p> <p><u>Jerry has \$7 to spend at the</u><br/><u>supermarket. He buys a loaf of</u><br/><u>bread for \$3. How much money</u><br/><u>does Jerry have now?</u></p> | <p><b>2.</b> <math>(5 \times 2) + 4</math></p> <hr/> <hr/> <hr/> <hr/>              |
| <p><b>3.</b> <math>5 + (4 - 1)</math></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>  | <p><b>4.</b> <math>20 - (6 \times 2)</math></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> |

Name \_\_\_\_\_

## Order of Operations Game

Three players are playing a board game. Complete the exercises below, and move each player's piece the same number of spaces as the answer for the unknown value. Circle the player who wins the game. Each black space counts as one space.



|    | Player 1   | Player 2   | Player 3  |
|----|--|--|---|
| 1. | $(50 - 2) \div 4 = \underline{\quad}$                      | $5 + 10 \div 5 = \underline{\quad}$                        | $108 \div (27 - 9) = \underline{\quad}$                     |
| 2. | $(343 - 5) \div 26 - 11 = \underline{\quad}$               | $(7 \times 7) \div (3 + 4) = \underline{\quad}$            | $6 + 3 - 7 = \underline{\quad}$                             |
| 3. | $(55 - 1) \div 9 = \underline{\quad}$                      | $(16 \times 3) \div (4 \times 6)$<br>$= \underline{\quad}$ | $(64 \div 16) \times (11 - 6)$<br>$= \underline{\quad}$     |
| 4. | $(15 - 36 \div 4) + (9 \times 2)$<br>$= \underline{\quad}$ | $2 \times (3 + 51 \div 17)$<br>$= \underline{\quad}$       | $144 - (10 + 4 \times 5 \times 5)$<br>$= \underline{\quad}$ |
| 5. | $(64 + 6) \div (\underline{\quad} \times 5) = 2$           | $81 \div (\underline{\quad} \div 4) = 9$                   | $(4 \times \underline{\quad}) - (1 + 8 \times 2)$<br>$= 3$  |

6. **Stretch Your Thinking** A fourth player joins the game and is given an expression that moves the game piece directly to the second black space on the board. The expression has a division, a multiplication, and a subtraction operation. Write a possible expression.

Name \_\_\_\_\_

## Missing Symbols

Write +, −, ×, or ÷ in the  $\bigcirc$  to make each equation true.

1.  $6 \times [(7 + 3) \bigcirc (4 \times 2)] = 108$

2.  $4 \times [(5 \times 3) + (24 \bigcirc 4)] = 84$

3.  $5 \times [(12 \bigcirc 3) - (15 - 9)] = 150$

4.  $[(40 + 17) + (27 \div 9)] \bigcirc 5 = 12$

5.  $[(8 \times 7) \bigcirc (4 \times 9)] + 15 = 35$

6.  $100 \div \{[(5 \times 5) - 6] - (12 \bigcirc 2)\} = 20$

7.  $4 \times \{[(8 + 5) \times 4] - [(18 \bigcirc 9) \times 3]\} = 100$

8.  $\{[(21 - 9) \bigcirc 2] + [(3 \times 7) - 5]\} \div 8 = 5$

9. **Stretch Your Thinking** Two numbers are unknown in the expression below. If the value of the expression is 98, what are the unknown numbers? (Both numbers are greater than 0.)

$$\square \times \{[(12 - 3) \times 3] + (\square \times 6) - 8\}$$