

# Patterns of Multiplication

To multiply by multiples of 10, 100, and 1,000, you can use basic facts and patterns.

Multiply  $40 \times 800$ .

Start with the basic fact.

$$4 \times 8 = 32$$

Count the number of zeros in each factor and find their sum.

$$\begin{array}{ccc} 40 & \times & 800 \\ \uparrow & & \uparrow \\ 1 \text{ zero} & + & 2 \text{ zeros} = 3 \text{ zeros} \end{array}$$

Write the zeros in the product.

$$40 \times 800 = 32,000$$

Multiply  $50 \times 80$ .

Start with the basic fact.

$$5 \times 8 = 40$$

Count the number of zeros in each factor and find their sum.

$$\begin{array}{ccc} 50 & \times & 80 \\ \uparrow & & \uparrow \\ 1 \text{ zero} & + & 1 \text{ zero} = 2 \text{ zeros} \end{array}$$

Write the zeros in the product.

$$50 \times 80 = 4,000$$

Complete.

1.  $20 \times 60$

Basic fact:  $2 \times 6 =$  \_\_\_\_\_

Number of zeros in each factor:

\_\_\_\_\_ + 1 = \_\_\_\_\_

Product:  $20 \times 60 =$  \_\_\_\_\_

2.  $9 \times 80$

Basic fact: \_\_\_\_\_

Number of zeros in each factor:

0 + \_\_\_\_\_ = \_\_\_\_\_

Product: \_\_\_\_\_

Complete the pattern.

3.  $5 \times 9 =$  \_\_\_\_\_

4.  $3 \times 6 =$  \_\_\_\_\_

5.  $4 \times 12 =$  \_\_\_\_\_

$5 \times 90 =$  \_\_\_\_\_

$3 \times 60 =$  \_\_\_\_\_

$40 \times 12 =$  \_\_\_\_\_

$5 \times 900 =$  \_\_\_\_\_

$3 \times 600 =$  \_\_\_\_\_

$400 \times 12 =$  \_\_\_\_\_

$5 \times 9,000 =$  \_\_\_\_\_

$3 \times 6,000 =$  \_\_\_\_\_

$4,000 \times 12 =$  \_\_\_\_\_

6.  $6 \times 60 =$  \_\_\_\_\_

7.  $7 \times \$3 =$  \_\_\_\_\_

8.  $5 \times 40 =$  \_\_\_\_\_

$60 \times 60 =$  \_\_\_\_\_

$70 \times \$3 =$  \_\_\_\_\_

$50 \times 40 =$  \_\_\_\_\_

$600 \times 60 =$  \_\_\_\_\_

$700 \times \$3 =$  \_\_\_\_\_

$500 \times 40 =$  \_\_\_\_\_

$6,000 \times 60 =$  \_\_\_\_\_

$7,000 \times \$3 =$  \_\_\_\_\_

$5,000 \times 40 =$  \_\_\_\_\_