

## Additional Practice 3-1

### Multiply Greater Numbers by Powers of 10

#### Another Look!

Patterns can help you multiply by powers of 10.

$$53 \times 1 = 53$$

$$53 \times 10 = 530$$

$$53 \times 100 = 5,300$$

$$53 \times 1,000 = 53,000$$

$$53 \times 10,000 = 530,000$$

$$70 \times 1 = 70$$

$$70 \times 10^1 = 700$$

$$70 \times 10^2 = 7,000$$

$$70 \times 10^3 = 70,000$$

$$70 \times 10^4 = 700,000$$

Look at the number of zeros or the exponent for the power of 10. Place that number of zeros on the end of the other factor.



1. To find  $61 \times 1,000$ , place 3 zeros on the end of 61 to form the product 61,000.

In **2–5**, use patterns to find each product.

2.  $75 \times 1$  **75**

$$75 \times 10$$
 **750**

$$75 \times 100$$
 **7,500**

$$75 \times 1,000$$
 **75,000**

$$75 \times 10,000$$
 **750,000**

3.  $50 \times 1$  **50**

$$50 \times 10$$
 **500**

$$50 \times 100$$
 **5,000**

$$50 \times 1,000$$
 **50,000**

$$50 \times 10,000$$
 **500,000**

4.  $60 \times 1$  **60**

$$60 \times 10^1$$
 **600**

$$60 \times 10^2$$
 **6,000**

$$60 \times 10^3$$
 **60,000**

$$60 \times 10^4$$
 **600,000**

5.  $18 \times 1$  **18**

$$18 \times 10^1$$
 **180**

$$18 \times 10^2$$
 **1,800**

$$18 \times 10^3$$
 **18,000**

$$18 \times 10^4$$
 **180,000**

In **6–9**, find each product.

6.  $84 \times 100$   
**8,400**

7.  $90 \times 10$   
**900**

8.  $54 \times 10^2$   
**5,400**

9.  $10^3 \times 12$   
**12,000**

In **10–15**, use reasoning to fill in the missing numbers.

10.  $45 \times 10^3 =$  **45,000**

11.  $12,960 = 10^1 \times$  **1,296**

12.  $22 \times 10^{\underline{4}} = 220,000$

13.  $10^4 \times 30 =$  **300,000**

14.  $10^{\underline{2}} \times 374 = 37,400$

15.  $70,000 = 70 \times 10^{\underline{3}}$



## 16. Construct Arguments

Ms. O'Malley's cousin lives 1,650 miles away. Ms. O'Malley won a gift card for 100 gallons of gas. If her car can travel 35 miles on each gallon, can she drive roundtrip to see her cousin on the free gas? Explain how you know.

**Yes; She can drive 3,500 miles on the free gas. The roundtrip distance is only 3,300 miles.**

17. Each beehive on Larson's Honey Farm usually produces 85 pounds of honey per year. About how many pounds of honey will  $10^3$  hives produce in a year?

**About 85,000 pounds**

18. A hotel chain is ordering new furnishings. What is the total cost of 1,000 sheet sets, 1,000 pillows, and 100 desk chairs?

**\$42,400**

DATA	Item	Price
	Towel sets	\$18
	Sheet sets	\$24
	Pillows	\$7
	Desk chair	\$114

19. Which number is greater: 87 or 13.688? How do you know?

**87; Sample answer: The greatest place value for both numbers is the tens place. 87 has a greater digit in the tens place than does 13.688.**

20. **Higher Order Thinking** The weight of an elephant is  $10^3$  times the weight of a cat. If the elephant weighs 14,000 pounds, how many pounds does the cat weigh? How did you find the answer?

**14 pounds; Sample answer: I needed to find a number that when multiplied by  $10^3$  equals 14,000. Since 3 zeros were added to a number to find the product, work backwards and remove the 3 zeros.**

## Assessment Practice

21. Which is equivalent to multiplying a number by  $10^3$ ?

- (A) multiplying by 30
- (B) multiplying by 1,000
- (C) multiplying by 10,000
- (D) multiplying by 10 twice

22. Which is equivalent to  $5 \times 10^4$ ? Select all that apply.

- ☒  $5 \times 10,000$
- ☐  $5 \times 100,000$
- ☐ 5,000
- ☒ 50,000
- ☒  $50 \times 10^3$