

1. Round the factors to estimate the products.

I round each factor to the largest unit.  
For example, 387 rounds to 400.

The largest unit in 51 is tens. So, I round  
51 to the nearest 10, which is 50.

a.  $387 \times 51 \approx \underline{400} \times \underline{50} = \underline{20,000}$

Now that I have 2 rounded factors, I can use the  
distributive property to decompose the  
numbers.  $400 \times 50 = (4 \times 100) \times (5 \times 10)$

I can use the associative property to regroup the  
factors.

$$(4 \times 5) \times (100 \times 10) = 20 \times 1,000 = 20,000$$

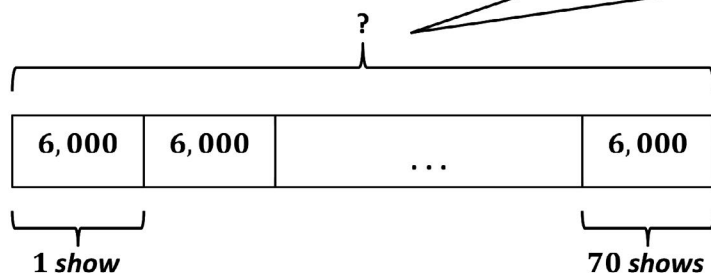
b.  $6,286 \times 26 \approx \underline{6,000} \times \underline{25} = \underline{150,000}$

I could have chosen to round 25 to 30. However, multiplying by 25 is  
mental math for me. If I round 26 to 25, I know my estimated product  
will be closer to the actual product than if I round 26 to 30.

2. There are 6,015 seats available for each of the Radio City Rockettes Spring Spectacular dance shows. If there are a total of 68 shows, about how many tickets are available in all?

The problem says “about,” so I know to estimate.

The unknown is the total number of tickets.



The long bar of the strip diagram indicates the total amount. There are about 70 shows and about 6,000 tickets for each show.

$$6,000 \times 70$$

$$= 6 \text{ thousands} \times 7 \text{ tens} = 42 \text{ ten thousands} = 420,000$$

$$= (6 \times 7) \times (1,000 \times 10) = 42 \times 10,000 = 420,000$$

**About 420,000 tickets are available for the shows.**

I can think about the problem in more than one way.

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Round the factors to estimate the products.

a.  $697 \times 82 \approx$  \_\_\_\_\_  $\times$  \_\_\_\_\_  $=$  \_\_\_\_\_

A reasonable estimate for  $697 \times 82$  is \_\_\_\_\_.

b.  $5,897 \times 67 \approx$  \_\_\_\_\_  $\times$  \_\_\_\_\_  $=$  \_\_\_\_\_

A reasonable estimate for  $5,897 \times 67$  is \_\_\_\_\_.

c.  $8,840 \times 45 \approx$  \_\_\_\_\_  $\times$  \_\_\_\_\_  $=$  \_\_\_\_\_

A reasonable estimate for  $8,840 \times 45$  is \_\_\_\_\_.

2. Complete the table using your understanding of place value and knowledge of rounding to estimate the product.

Expressions	Rounded Factors	Estimate
a. $3,409 \times 73$	$3,000 \times 70$	210,000
b. $82,290 \times 240$		
c. $9,832 \times 39$		
d. 98 tens $\times$ 36 tens		
e. 893 hundreds $\times$ 85 tens		

3. The estimated product of a multiplication problem is 800,000. Which of the following expressions could result in this product? Explain how you know.

$8,146 \times 12$

$81,467 \times 121$

$8,146 \times 121$

$81,477 \times 1,217$

4. Fill in the blank with the missing estimate.

a.  $751 \times 34 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 24,000$

b.  $627 \times 674 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 420,000$

c.  $7,939 \times 541 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 4,000,000$

5. In a single season, the Houston Astros sell an average of 36,796 tickets for each of their 81 home games. About how many tickets do they sell for an entire season of home games?

6. Raphael wants to buy a new car.

a. He needs a down payment of \$3,000. If he saves \$340 each month, about how many months will it take him to save the down payment?

b. His new car payment will be \$288 each month for five years. Estimate the total of these payments.