

# Multiplication Patterns

**R 2-1**

Commutative Property of Multiplication	Associative Property of Multiplication
You can multiply two factors in any order. $15 \times 9 = 9 \times 15$	You can change the grouping of factors. $(8 \times 20) \times 5 = 8 \times (20 \times 5)$

You can also use patterns to multiply mentally.

Fact:  $5 \times 7 = 35$

$50 \times 7 = \mathbf{350}$

$5 \times 70 = \mathbf{350}$

$500 \times 7 = \mathbf{3,500}$

$50 \times 70 = \mathbf{3,500}$

$5,000 \times 7 = \mathbf{35,000}$

$500 \times 70 = \mathbf{35,000}$

$50,000 \times 7 = \mathbf{350,000}$

$5,000 \times 70 = \mathbf{350,000}$

Pattern: Notice that the product is always 35 with the different number of zeros that are in the factors.

Find  $30 \times 3 \times 50$ .

Use the Associative Property of Multiplication to regroup.

$(30 \times 50) \times 3$

$1,500 \times 3 = 4,500$

Find each product. Use patterns and properties to compute mentally.

1.  $80 \times 90 =$  \_\_\_\_\_      2.  $40 \times 800 =$  \_\_\_\_\_

3.  $5 \times 10 \times 20 =$  \_\_\_\_\_      4.  $4 \times 30 \times 25 =$  \_\_\_\_\_

5. **Number Sense** You know that  $6 \times 7 = 42$ . How can you find  $60 \times 700$ ?

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