

## Greatest Common Factor

### Reteach

The *greatest common factor*, or GCF, is the largest number that is the factor of two or more numbers.

To find the GCF, first write the factors of each number.

#### Example

Find the GCF of 18 and 24.

**Solution** Write the factors of 18 and 24. Highlight the *largest* number that is common to both lists of factors.

Factors of 18: 1, 2, 3, **6**, 9, and 18

Factors of 24: 1, 2, 3, 4, **6**, 8, 12, and 24

The GCF of 18 and 24 is 6.

This process works the same way for more than two numbers.

#### Find the GCF.

1. 32 and 48

2. 18 and 36

3. 28, 56, and 84

4. 30, 45, and 75

The *distributive principle* can be used with the GCF to rewrite a sum of two or more numbers.

#### Example

Write  $30 + 70$  as the product of the GCF of 30 and 70 and a sum.

#### Solution

**Step 1** Find the GCF of 30 and 70.

Factors of 30: 1, 2, 3, 5, 6, **10**, 15, and 30

Factors of 70: 1, 2, 5, 7, **10**, 14, 35, and 70.

The GCF is 10.

**Step 2** Write " $10 \times (? + ?)$ ." To find the questions marks, divide:  $30 \div 10 = 3$ ;  $70 \div 10 = 7$

**Step 3** So,  $30 + 70$  can be written as  $10 \times (3 + 7)$ .

#### Rewrite each sum as a product of the GCF and a new sum.

5.  $9 + 15 =$

6.  $100 + 350 =$

7.  $12 + 18 + 21 =$