

## Reducing Fractions to Lowest Terms

Suppose you have the fraction  $\frac{30}{45}$ . Those are pretty big numbers to deal with. Is there a simpler way to write the same fraction? Well, one common method is to write the fraction in **lowest terms**. A fraction in lowest terms is written using the smallest numbers possible that have the same relationship as the numbers in the original fraction. A fraction in lowest terms is the simplest form of that fraction. Read on to learn how to reduce a fraction to lowest terms.

**PROCEDURE:** To reduce a fraction to lowest terms, first find all the numbers that divide evenly into the numerator and the denominator. These numbers are known as *factors*. Find the largest factor that is common to both the numerator and the denominator. This is known as the Greatest Common Factor (GCF). Then divide both the numerator and the denominator by the GCF.

**SAMPLE PROBLEM:** Reduce the fraction  $\frac{30}{45}$  to lowest terms.

Step 1: Find all the factors of the numerator and denominator, and determine which is the largest factor in both lists, or the GCF.

*factors of the numerator*      30: 1, 2, 3, 5, 6, 10, 15, 30  
*factors of the denominator*      45: 1, 3, 5, 9, 15, 45

Step 2: Divide both the numerator and the denominator by the GCF, which is 15.

$$\frac{30}{45} = \frac{30 \div 15}{45 \div 15} = \frac{2}{3}$$

$\frac{30}{45}$  reduced to lowest terms is  $\frac{2}{3}$ .

### How Low Can You Go?

1. Reduce each fraction to lowest terms.

a.  $\frac{10}{12}$

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b.  $\frac{36}{60}$

\_\_\_\_\_

c.  $\frac{75}{100}$

\_\_\_\_\_

d.  $\frac{17}{68}$

\_\_\_\_\_

e.  $\frac{8}{64}$

\_\_\_\_\_

f.  $\frac{48}{54}$

\_\_\_\_\_

g.  $\frac{11}{15}$

\_\_\_\_\_

h.  $\frac{150}{200}$

\_\_\_\_\_

2. Circle the fractions below that are already written in lowest terms.

a.  $\frac{7}{77}$

b.  $\frac{21}{25}$

c.  $\frac{17}{19}$

d.  $\frac{9}{20}$

e.  $\frac{37}{51}$