

Equivalent Fractions have the same value. When you multiply both the top and bottom by the same number, the fraction keeps its value.

**Example 2**

Answer the following questions – justify your answers by showing your work.

a) Is  $\frac{12}{16}$  equivalent to  $\frac{3}{4}$ ? *yes*

$$\frac{12 \div 4}{16 \div 4} = \frac{3}{4} \quad \text{so} \quad \frac{12}{16} = \frac{3}{4}$$

b) Is  $\frac{7}{20}$  equal to  $\frac{3}{5}$ ? *No.*

$$\frac{7 \div 1}{20 \div 4} = \frac{7}{5} \quad \frac{3 \times 5}{4 \times 5} = \frac{15}{20}$$

c) Is  $\frac{2}{3}$  equivalent to  $\frac{24}{36}$ ? *yes*

$$\frac{2 \times 12}{3 \times 12} = \frac{24}{36}$$

**Example 3 - Reducing Fractions**

Commonly in textbooks and online when an answer to a math question is a fraction, that fraction is **reduced to its lowest terms**. Divide both the top and bottom of the fraction by the Greatest Common Factor.

a) Reduce  $\frac{15}{30}$  to its lowest terms.

$$\frac{15 \div 15}{30 \div 15} = \frac{1}{2}$$

b) Reduce  $\frac{10}{35}$  to its lowest terms. *GCF = 5*

$$\frac{10 \div 5}{35 \div 7} = \frac{2}{5}$$

c) Reduce  $\frac{42}{48}$  to its lowest terms. *GCF = 6*

$$\frac{42 \div 6}{48 \div 6} = \frac{7}{8}$$

d) Reduce  $\frac{17}{19}$  to its lowest terms. *It is the lowest term.*