

How to tell if fractions are equivalent

- 1) Simplify all fractions. If they “reduce” to be the same fraction, then the fractions are equivalent.
- 2) Cross multiply. We do this by making a “heart” shape. If the two products are equal, then the fractions are equivalent.
- 3) Get a common denominator and compare numerators.

Example: Find out if the fractions $\frac{6}{15}$ and $\frac{10}{50}$ are equivalent.

Way #1: Simplify both fractions completely:

$$\frac{6}{15} = \frac{2 \cdot \cancel{3}}{5 \cdot \cancel{3}} = \frac{2}{5}$$

$$\frac{10}{50} = \frac{2 \cdot \cancel{5}}{10 \cdot \cancel{5}} = \frac{2 \cdot 1}{2 \cdot 5} = \frac{1}{5}$$

Reduce to different numbers:

Not Equivalent!

Way #2: Cross multiply:

$$\frac{6}{15} ? \frac{10}{50}$$
$$50 \cdot 6 = 300 \quad 10 \cdot 15 = 150$$

← Different product:
Not Equivalent!

Way #3: Get a common denominator between both fractions:

Numerators are different:

Not Equivalent!

$$\frac{6}{15} \cdot \frac{10}{10} = \frac{60}{150}$$

$$\frac{10}{50} \cdot \frac{3}{3} = \frac{30}{150}$$