

Ratios

Vocabulary

Ratio	A means of comparing two numbers or quantities that have the same units. A ratio can be expressed in a variety of ways: 3 to 5 3:5 $\frac{3}{5}$
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Example:

Length to Width 18" to 10" 18" : 10" $\frac{18''}{10''}$ which can be reduced to $\frac{9}{5}$

We can interpret this to mean, for every 9 inches of length, the object has 5 inches of width.

A ratio is correctly written when both numbers or quantities have the same units.

1.5 feet to 10 inches is not a ratio until it is changed to 18 inches to 10 inches.

Example:

CJ ran $4\frac{1}{3}$ miles for every $1\frac{1}{5}$ miles MG walked. Express this ratio as a ratio of whole numbers.

First, write the ratio as a complex fraction. $\frac{4\frac{1}{3}}{1\frac{1}{5}}$. Then, evaluate it: $\frac{\frac{13}{3}}{\frac{6}{5}} = \frac{13}{3} \cdot \frac{5}{6} = \frac{65}{9}$

CJ runs 65 miles for every 9 miles that MG walks.

TRY: Express each of the following as ratios of whole numbers. Be careful to have **similar units**.

TL takes $1\frac{1}{2}$ hours to complete unit 5, while JT takes 45 minutes. Find the ratio of the two times.

Conveyor A moves 2.4 feet of board in the same time that Conveyor B moves 5.76 feet of board. Find the ratio of the two conveyors.