True Proportions

Working with proportions is no different than working with fractions. Except in a proportion, there are 2 fractions present, and they are equivalent to one another. Here is the general form of a proportion:

$$\frac{A}{B} = \frac{C}{D}$$

Proportions are helpful because they can be cross-multiplied:

$$A \times D = B \times C$$

You can find the missing term in a proportion by cross-multiplying and solving for the missing number.

Examples

$$\frac{1}{2} = \frac{6}{12}$$

$1 \times 12 = 6 \times 2$

$12 = 12$

Both sides of the proportion are equivalent.

$$\frac{1}{5} = \frac{10}{50}$$

$1 \times 50 = 5 \times 10$

$50 = 50$

Both sides of the proportion are equivalent.

Sample Problems

1. $\dfrac{2}{3} = \dfrac{C}{6}$

2. $\dfrac{A}{5} = \dfrac{6}{10}$

3. $\dfrac{2}{6} = \dfrac{8}{D}$

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Solutions

1. C = 4

2 x 6 = 3 x C
12 = 3 x C

C= $\dfrac{12}{3}$

C = 4

2. A = 3

A x 10 = 5 x 6

A x 10 = 30

$A = \dfrac{30}{10}$

$A = 3$

3. $D = 24$

$2 \times D = 6 \times 8$

$2 \times D = 48$

$D = \dfrac{48}{2}$