

2 - 8

**Proportions and
Scale Drawings**

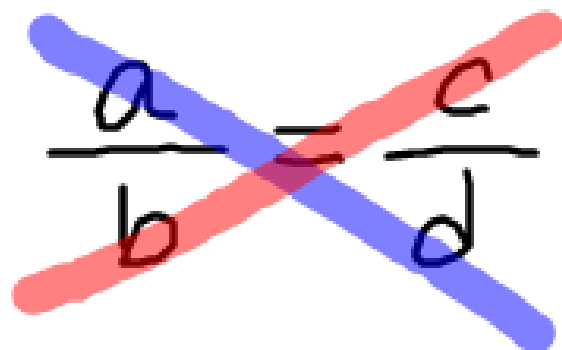
proportion: an equation stating that two ratios are equivalent

$$\frac{1}{2} = \frac{3}{6}$$

Written different ways:

$$\frac{1}{2} = \frac{3}{6} \quad 1:2 = 3:6$$

Cross Products



The image shows the equation $\frac{a}{b} = \frac{c}{d}$ with a blue diagonal line crossing through the top-left and bottom-right terms (a and d), and a red diagonal line crossing through the top-right and bottom-left terms (c and b). This illustrates the process of cross-multiplication.

$$\frac{a}{b} = \frac{c}{d}$$

$$a \cdot d = b \cdot c$$

Are the following proportions?

Ex: $\frac{3}{4} = \frac{21}{28}$

84 84

yes

Ex: $2 : 7 = 6 : 10$

20 42

no

Complete the proportions.

Ex: $\frac{1}{2} = \frac{\star}{8}$ (4)

$2 \times$ $\times 4$ 8

Ex: $\frac{12}{\star} = \frac{4}{3}$ (9)

$4 \times$ $\times 3$ 36

Ex: $\frac{11}{\star} = \frac{44}{80}$ (20)

$\div 4$ $\div 4$

**Ex: The scale of a painting is
1 in : 3 ft. Find the drawing length
that would be used to represent an
actual length of 12 ft.**

$$\frac{1 \text{ in}}{3 \text{ ft}} = \frac{x \text{ in}}{12 \text{ ft}}$$

3x 12

$$x = 4$$

4 in



In-Class / Homework:

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