

Dimensional Analysis

1. The basic concept:

$$2 \times \frac{1}{2} = \frac{2 \times 1}{2} = 1 \times 1 = 1$$

2. Canceling means dividing something by itself. This always equals 1.

3. The same principal works with symbols.

$$\cancel{b} \times \frac{2}{\cancel{b}} = 2$$

4. The symbols can be units, like cm or m:

$$\cancel{\text{cm}} \times \frac{\text{m}}{\cancel{\text{cm}}} = \text{m} \quad \left| \quad = .34 \text{ m}$$

5. Adding numbers, we can convert between units. You need to know the equivalence statement, like $1 \text{ m} = 100 \text{ cm}$.

$$34 \cancel{\text{cm}} \times \frac{1 \text{ m}}{100 \cancel{\text{cm}}}$$