Converting Units

Conversion factor: a ratio of two equivalent measures in different units.

Choose and multiply by the conversion factor

The appropriate factor divides out the common units

example:

A **330 min; hours**

$$330 \text{ min} \cdot \frac{1 \text{ h}}{60 \text{ min}} \quad \leftarrow \text{Choose a conversion factor.}$$

$$= 330 \text{ min} \cdot \frac{1 \text{ h}}{60 \text{ min}} \quad \leftarrow \text{Divide out common units.}$$

$$= 5.5 \text{ h} \quad \leftarrow \text{Simplify.}$$

Converting Units

example

B **15 kg; grams**

Choose a conversion factor. →
$$15 \text{ kg} \cdot \frac{1000 \text{ g}}{1 \text{ kg}}$$

Divide out common units. →
$$= 15 \text{ kg} \cdot \frac{1000 \text{ g}}{1 \text{ kg}}$$

Simplify. →
$$= 15{,}000 \text{ g}$$

example

C **5 ft 3 in.; inches**

$$5 \text{ ft } 3 \text{ in.} = 5 \text{ ft} + 3 \text{ in.}$$

$$= 5 \text{ ft} \cdot \frac{12 \text{ in.}}{1 \text{ ft}} + 3 \text{ in.}$$

$$= 60 \text{ in.} + 3 \text{ in.} = 63 \text{ in.}$$