

**Example 3: Convert Measurements Into Different Units**

Perform each of the following unit conversions using BOTH the **proportion method** and the **shortcut** method.

<p>a) Convert 5.9 feet to inches.</p> $\frac{12 \text{ inches}}{1 \text{ foot}} = \frac{x \text{ inches}}{5.9 \text{ feet}}$ $\frac{5.9 \text{ ft} \times 12 \text{ in}}{1 \text{ ft}} = x$ $70.8 \text{ inches} = x$	$1 \text{ ft} = 12 \text{ inches}$ $= 5.9 \times 12$ $= 70.8 \text{ inches}$
<p>b) Convert 2980 millimetres to centimetres.</p> $\frac{1 \text{ cm}}{10 \text{ mm}} = \frac{x}{2980 \text{ mm}}$ $\frac{2980 \text{ mm} \times 1 \text{ cm}}{10 \text{ mm}} = x$ $x = 298 \text{ cm}$	$1 \text{ cm} = 10 \text{ mm} \quad \text{divide by 10}$ $2980 \div 10 = 298 \text{ cm}$
<p>c) Convert 88 ounces to pounds.</p> $\frac{1 \text{ lb}}{16 \text{ oz}} = \frac{x}{88 \text{ oz}}$ $\frac{88 \times 1}{16} = x$ $x = 5.5 \text{ lbs}$	$1 \text{ lb} = 16 \text{ oz}$ $\frac{88}{16} = 5.5 \text{ lbs}$ $= 5.5 \text{ lbs}$ <p>03 to 16 small to large Divide</p>
<p>d) Convert 230 minutes to hours.</p> $\frac{1 \text{ hr}}{60 \text{ mins}} = \frac{x}{230 \text{ mins}}$ $\frac{230 \times 1}{60} = x$ $x = 3.8\bar{3} \text{ hours}$	$1 \text{ hr} = 60 \text{ minutes}$ $\frac{230 \text{ mins}}{60} = 3.8\bar{3}$ $= 3.8\bar{3} \text{ hours}$ <p>min to hours Divide</p>
<p>e) Convert 4.8 kilometres to metres.</p> $\frac{1000 \text{ m}}{1 \text{ km}} = \frac{x}{4.8 \text{ km}}$ $\frac{4.8 \times 1000}{1} = x$ $x = 4800 \text{ m}$	$1 \text{ km} = 1000 \text{ m}$ $4.8 \times 1000 = 4800$ $4800 \text{ m}$ <p>large <math>\rightarrow</math> small multiply</p>
<p>f) **Convert 39500 milligrams to kilograms.</p> $\frac{1 \text{ kg}}{1000000 \text{ mg}} = \frac{x \text{ kg}}{39500 \text{ mg}}$ $\frac{39500 \text{ mg}}{1000000 \text{ mg}} = x \text{ kg}$ $x = 0.0395 \text{ kg}$	$1 \text{ kg} = 1000000 \text{ mg}$ $\frac{39500}{1000000} = 0.0395 \text{ kg}$ <p>small <math>\rightarrow</math> large Divide</p>
<p>g) **Convert 2.3 years into minutes</p> <p>① Find how many minutes = 1 year  <math>365 \text{ days} \times 24 \text{ hours} \times 60 \text{ min} = 1 \text{ year (mins)}</math>  <math>525600 \text{ mins} = 1 \text{ year}</math></p> <p>②</p> $\frac{525600 \text{ mins}}{1 \text{ year}} = \frac{x \text{ min}}{2.3 \text{ yrs}}$ $\frac{2.3 \times 525600}{1} = x$ $x = 1208880 \text{ mins}$	$1 \text{ year} = 525600 \text{ mins}$ $2.3 \times 525600 = x$ $1208880 \text{ min} = 1 \text{ year}$ <p>large <math>\rightarrow</math> small multiply</p>