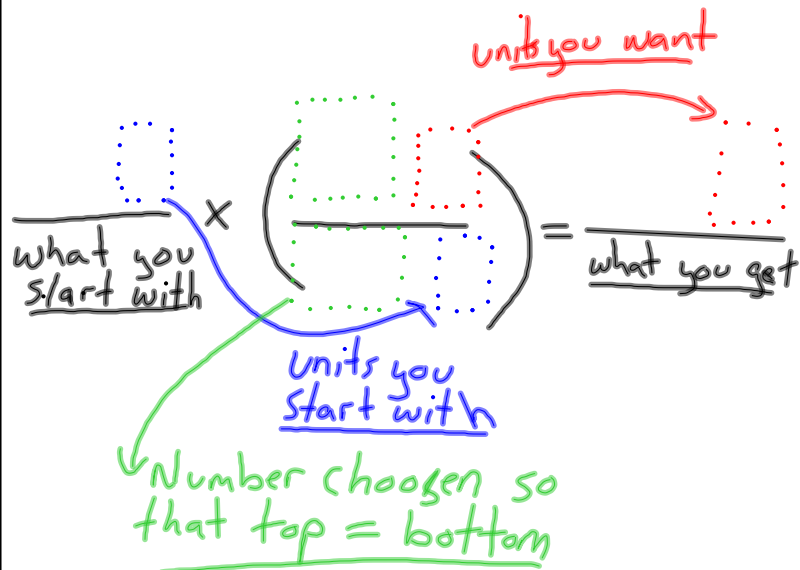


## Converting Units. (Factor Labelling Method)



<http://www.youtube.com/watch?v=XKCZn5MLKvk>

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convert = (Motion)  
using and time.

meters  $\leftrightarrow$  Km

cm  $\leftrightarrow$  m

seconds  $\rightarrow$  minutes

minutes  $\rightarrow$  hours

① 720 m  $\rightarrow$  Km

② 68 seconds  $\rightarrow$  min.

③ 4 hours  $\rightarrow$  sec

④ 5267 cm  $\rightarrow$  Km

⑤ 8678 sec  $\rightarrow$  hours

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720m → Km

720 m  
 what you start with

x

$\left( \frac{1 \text{ Km}}{1000 \text{ m}} \right)$

units you start with

units you want

=

0.72 Km  
 what you get

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68(sec) → min

68 sec  
 what you start with

x

$\left( \frac{1 \text{ min}}{60 \text{ sec}} \right)$

units you start with

units you want

=

1.13 min  
 what you get

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4 hours.  $\rightarrow$  Sec.

units you want

4 hrs.  $\times$   $\left( \frac{3600 \text{ sec}}{1 \text{ hrs}} \right)$  =  $14400 \text{ sec.}$

what you start with

units you start with

$\left( \frac{60 \times 60 \text{ m}}{1 \text{ min}} = \frac{3600 \text{ sec}}{1 \text{ h}} \right)$

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5267 cm  $\rightarrow$  Km

units you want

5267 cm  $\times$   $\left( \frac{1 \text{ Km}}{100000 \text{ cm}} \right)$  =  $0.05267 \text{ Km}$

what you start with

units you start with

$1 \text{ Km} = 1000 \text{ m} \quad \frac{100 \text{ cm}}{1 \text{ m}} \quad \frac{100000 \text{ cm}}{1 \text{ Km}}$

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8678sec  $\rightarrow$  hours.

The diagram illustrates the unit conversion process for 8678 seconds to hours. It features a central fraction  $\frac{1 \text{ hr}}{3600 \text{ sec}}$  enclosed in a large circle. To the left, the value 8678 is written with 'sec' in blue dotted text, and 'what you start with' is written below it. A blue 'x' is placed between 8678 and the circle. A blue arrow points from the 'sec' in the initial value to the '3600 sec' in the denominator of the circle. Below the circle, the text 'units you start with' is written in blue and underlined. A green arrow points from this text to the '3600 sec' in the denominator. To the right of the circle, the result '2.41 hrs' is written with 'hrs' in red dotted text, and 'what you get' is written below it. A red arrow points from the '1 hr' in the numerator of the circle to the 'hrs' in the final result. Above the circle, the text 'units you want' is written in red and underlined.

$$\frac{8678 \text{ sec}}{\text{what you start with}} \times \left( \frac{1 \text{ hr}}{3600 \text{ sec}} \right) = \frac{2.41 \text{ hrs}}{\text{what you get}}$$

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