

# Warm- Up

Complete each of the following calculations giving the correct number of significant figures in your answer:



1)  $22.37 \text{ cm} \times 3.10 \text{ cm} \times 85.75 \text{ cm} = 5950$

2)  $12.4 \text{ km} + 8 \text{ km} - 10 \text{ km} = 10$



3)  $\underline{2000} / 59 \quad 30$



4)  $\uparrow 120 - 7.08 = 110$



## Check Homework

3 sigfigs

876493 ← 6 sigfigs

876000

## Converting Units:

You need to multiply by conversion factors which are memorized or referenced

i.e.  $1\text{m} = 100\text{ cm}$   
 $1\text{ hr} = 60\text{ min}$   
 $1000\text{m} = 1\text{ km}$   
 $1\text{ min} = 60\text{ sec}$

Conversion Factors are considered exact numbers and do not count towards sig figs

## Example 1

d = 1.8 m, convert to cm

$$1 \text{ m} = 100 \text{ cm}$$

$$\textcircled{1} 1.8 \times 100 = 180 \text{ cm}$$

$$\textcircled{2} \underline{180} = 180 \text{ cm}$$

$$\textcircled{3} 1.8 \text{ m} \times \frac{100 \text{ cm}}{1 \text{ m}} = \frac{1.8 \text{ m} \times 100 \text{ cm}}{1 \text{ m}} = 180 \text{ cm}$$

d = 1.8 m, convert to mm

$$1 \text{ m} = 1000 \text{ mm}$$

$$\textcircled{1} 1.8 \times 1000 = 1,800 \text{ mm}$$

$$\textcircled{2} \underline{1800} = 1800 \text{ mm}$$

$$\textcircled{3} 1.8 \text{ m} \times \frac{1000 \text{ mm}}{1 \text{ m}} = 1800 \text{ mm}$$

$$\frac{2x}{x} = x$$

$$\frac{1.8m}{1m}$$

$$\frac{1.8}{1} = 1.8$$

$$\frac{4}{4} = 1$$
$$2 \times \frac{4}{4} = 2$$

$$1\text{m} = 100\text{cm}$$

$$\frac{1\text{m}}{100\text{cm}}$$

Example 2:

$t = 30.0 \text{ s}$ , convert to  $h$

$$60 \text{ s} = 1 \text{ min}$$

$$60 \text{ min} = 1 \text{ hr}$$

$$30.0 \text{ s} \times \frac{1 \text{ min}}{60 \text{ s}} = \frac{30.0 \cancel{\text{ s}} \text{ min}}{60 \cancel{\text{ s}}}$$
$$= 0.500 \text{ min}$$

$$0.500 \cancel{\text{ min}} \times \frac{1 \text{ hr}}{60 \cancel{\text{ min}}} = \frac{0.500 \text{ hr}}{60}$$
$$= 0.00833 \text{ hr}$$

### Example 3

$v = 102 \text{ km/h}$ , convert to  $\frac{\text{m}}{\text{s}}$

$$\frac{102 \cancel{\text{km}}}{1 \text{ h}} \times \frac{1000 \text{ m}}{1 \cancel{\text{km}}} = \frac{102000 \text{ m}}{1 \text{ h}}$$

-  $1 \text{ km} = 1000 \text{ m}$   
 $1 \text{ h} = 60 \text{ min}$   
 $1 \text{ min} = 60 \text{ s}$

$$\frac{102000 \text{ m}}{1 \cancel{\text{hr}}} \times \frac{1 \cancel{\text{hr}}}{3600 \text{ s}} =$$

$$\frac{102000 \text{ m}}{3600 \text{ s}} = 28.3 \text{ m/s}$$





## Attachments

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S10 sig figs answers.notebook