

Physical Quantities  $\rightarrow$  Length (L)  
Mass (M)  
Time (T)  
Current (I)

Units : SI / International / Metric system  
Imperial / English (US)

SI :

Fundamental

Units

Derived Units

Mass - kilograms (kg)

speed :  $\frac{L}{T} = \frac{m}{sec}$

Time - seconds (s)

Length - meters (m)

Current - Amperes (A)

80 m  $\rightarrow$  km

$$1 \text{ km} = 1000 \text{ met}$$

$$x = 80 \text{ met}$$

$$\frac{1}{x} = \frac{1000}{80} \text{ or } x = \frac{80}{1000}$$

$$\boxed{x = 0.08 \text{ km}}$$

0.2 miles  $\rightarrow$  WT Young farm CP

4 minutes, speed =  $\frac{\text{distance}}{\text{time}}$

$$a) \text{ speed} = \frac{0.2 \text{ miles}}{4 \text{ min}} = 0.05 \frac{\text{miles}}{\text{min}}$$

$$b) \text{ speed} = \frac{0.05 \text{ miles}}{\text{min}} \quad 1 \text{ min} = \frac{1}{60} \text{ hr}$$
$$= \frac{0.05 \text{ miles}}{\frac{1}{60} \text{ hr}} = 3 \frac{\text{miles}}{\text{hr}}$$

$$c) \text{ speed} : \frac{3 \text{ miles}}{\text{hr}} = 3 \times 1.60 \frac{\text{km}}{\text{hr}} \quad 1 \text{ mile} = 1.60 \text{ km}$$
$$= 4.8 \frac{\text{km}}{\text{hr}}$$

$$d) 4.8 \frac{\text{km}}{\text{hr}} \rightarrow \frac{\text{m}}{\text{sec}} \Rightarrow 4.8 \frac{\text{km}}{\text{hr}} = \frac{4.8 \times 10^3 \text{ m}}{60 \times 60 \text{ sec}}$$

$$1 \text{ km} = 10^3 \text{ met} \Rightarrow 1.33 \frac{\text{met}}{\text{sec}}$$

$$1 \text{ sec} = \frac{1}{60} \text{ min} \quad 1 \text{ min} = \frac{1}{60} \text{ hr}$$

$$= \frac{1}{60} \times \frac{1}{60} \text{ hr} \quad 1 \text{ sec} = \frac{1}{60} \times \frac{1}{60} \text{ hr}$$

$$\Rightarrow 1 \text{ hr} = 60 \times 60 \text{ sec}$$





