

$$[1 \text{ FOOT}] \left[ \frac{12 \cancel{\text{IN}}}{\cancel{\text{FOOT}}} \right] \left[ \frac{2.54 \text{ cm}}{\cancel{\text{IN}}} \right] \frac{\text{M}}{100 \text{ cm}} = ? \text{ M}$$

↑ 0.3048

$$\left[ \frac{2.54 \text{ cm}}{\text{IN}} \right]$$

centi =  $\frac{1}{100}$

kilo = 1000

milli =  $\frac{1}{1000}$

$$\left[ \frac{0.3048 \text{ M}}{\text{FT}} \right]$$

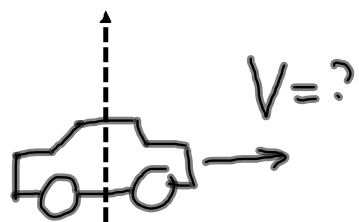
$$\downarrow$$

$$\left[ \frac{3.281 \text{ FT}}{\text{M}} \right]$$

$$\frac{16 \cancel{\text{FT}}}{\left[ \frac{3.28 \cancel{\text{FT}}}{\text{M}} \right]} = 4.878 \text{ M}$$

$$V = \frac{\Delta d}{\Delta t} = \frac{4.878 \text{ M}}{3.65 \cancel{\text{s}}} = 1.33 \text{ M/s}$$

$$\left[ \frac{1.33 \cancel{\text{M}}}{\cancel{\text{s}}} \right] \left[ \frac{3.28 \cancel{\text{FT}}}{\cancel{\text{M}}} \right] \left( \frac{\text{Mile}}{5280 \cancel{\text{FT}}} \right) \left( \frac{3600 \cancel{\text{s}}}{\text{HR}} \right) = 2.97 \text{ MPH}$$



$$200 \text{ MILES} = \Delta d$$

$$\Delta t = 4 \text{ HRS}$$

$$V_{\text{AVG}} = \frac{\Delta d}{\Delta t}$$

$$= \frac{200 \text{ MILES}}{4 \text{ HRS}}$$

$$= 50 \text{ MPH}$$

$$\left[ \frac{2.54 \text{ cm}}{\text{INCH}} \right] = \text{C.F.}$$

$$\text{CENTI} \rightarrow \frac{1}{100}$$

$$\text{Milli} \rightarrow \frac{1}{1000}$$

$$\text{KILO} \rightarrow 1000$$

$$\left[ \frac{12 \cancel{\text{ IN}}}{\cancel{\text{ FT}}} \right] \left[ \frac{2.54 \cancel{\text{ cm}}}{\cancel{\text{ IN}}} \right] \frac{\text{M}}{100 \cancel{\text{ cm}}} \rightarrow 0.3048 \text{ M}$$

$$\therefore \text{C.F.} = \left[ \frac{0.3048 \text{ M}}{\text{FT}} \right]$$

$$\text{C.F.} = \frac{\text{K FT}}{[\text{M}]}$$

3.281

$$16 \text{ FT} = 7 \text{ M}$$

$$\frac{16 \text{ FT}}{3.281 \text{ FT/M}} = 4.876 \text{ M}$$

$$\frac{4.876 \text{ M}}{3.42 \cancel{\text{ s}}} = \left\{ \left[ \frac{1.42 \cancel{\text{ M}}}{\cancel{\text{ s}}} \right] \left[ \frac{3.28 \cancel{\text{ FT}}}{\cancel{\text{ M}}} \right] \left( \frac{\text{Mile}}{5280 \cancel{\text{ FT}}} \right) \left( \frac{3600 \cancel{\text{ s}}}{\text{hr}} \right) \right\}$$

$$\text{SOPHIE'S speed} = 3.18 \text{ MPH}$$

$$\left(12 \frac{\cancel{\mu}}{\cancel{s}}\right) \left(\frac{3.281 \cancel{\text{ft}}}{\cancel{\mu}}\right) \left(\frac{\cancel{\text{yd}}}{3 \cancel{\text{ft}}}\right) = \left(\frac{13.124 \text{ yds}}{\cancel{s}}\right)$$

$$\frac{100 \cancel{\text{yds}}}{13.124 \cancel{\text{yds}} \frac{\cancel{s}}{\cancel{s}}} = 7.62 \cancel{s}$$