

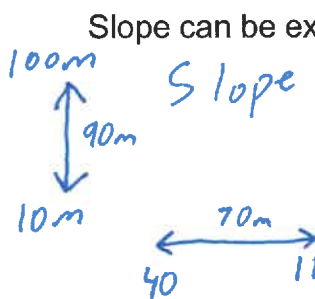
2.1 Slope Notes

Slope: steepness or pitch of a line

Slope is a ratio: between the vertical change and the horizontal change

Slope can be expressed as:

Slope $m = \frac{\text{rise}}{\text{run}}$ or $\frac{\text{vertical change}}{\text{horizontal change}}$



Applications: roofs, ramps, sun deck, pipes, drains, sidewalks, septic fields, roads

Ex. 1

Calculate the slope of a line that has a rise of 12 cm for a run of 8 cm.

$$m = \frac{\text{rise}}{\text{run}}$$

$$m = \frac{12\text{cm}}{8\text{cm}}$$

$$m = 1.5 \leftarrow \text{Slope has no units}$$

Show you know

Calculate the slope of a line that has a run of 15m and a rise of 32m.

$$m = \frac{\text{rise}}{\text{run}}$$

$$m = \frac{32\text{m}}{15\text{m}}$$

$$m = 2.13$$

Ex. 3

The slope of a line is $\frac{7}{20}$. What is the rise if the run is 100 metres?

$$m = \frac{\text{rise}}{\text{run}}$$

$$\frac{7}{20} = \frac{x}{100\text{m}} \quad x = 35\text{m}$$

Show you know:

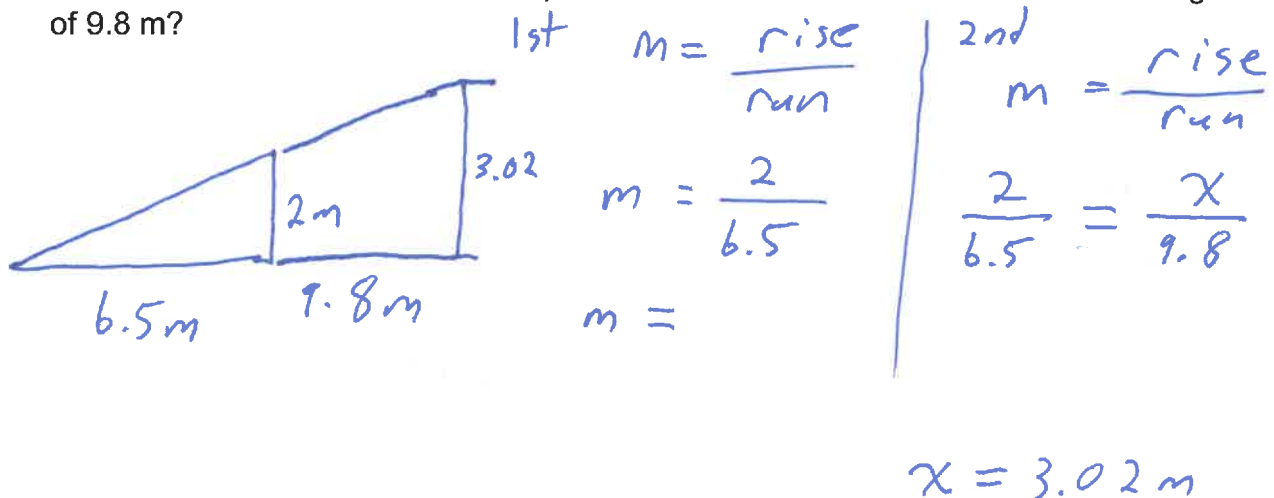
What is the run of a ramp if the rise is 10 meters and a slope of 0.54.

$$m = \frac{\text{rise}}{\text{run}}$$

$$\frac{0.54}{1} = \frac{10\text{m}}{x} \quad x = 18.52\text{m}$$

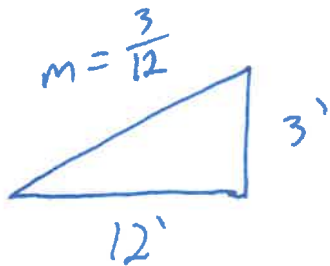
Ex 4.

Harry is building a ramp in two sections, both with the same slope. If one section rises 2 m for a run of 6.5 m, how much will it have to rise for the remaining run of 9.8 m?



Show you know

Bob is building a shed. A metal roof needs to rise 3 feet for every 12 feet of run so the snow sheds properly. How much will it have to rise for a run of 40 feet?



$$m = \frac{\text{rise}}{\text{run}}$$

$$\frac{3}{12} = \frac{x}{40}$$

$$x = 10'$$

