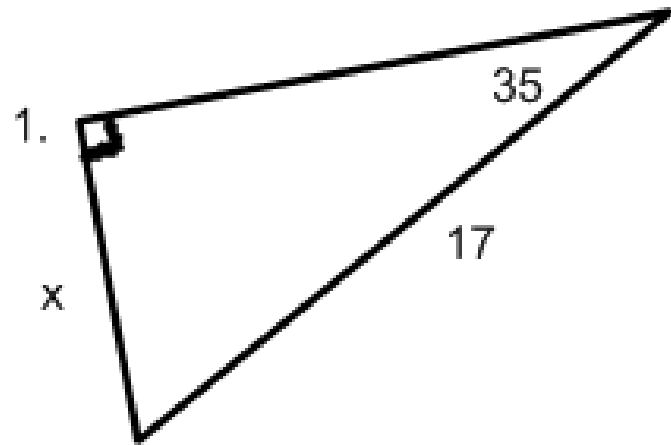
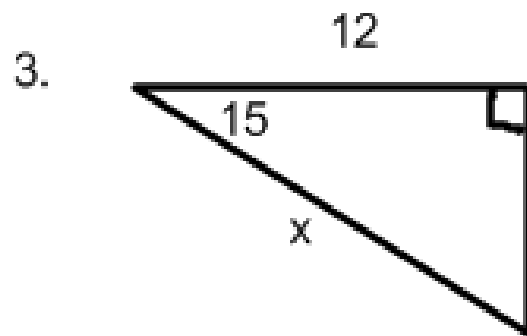
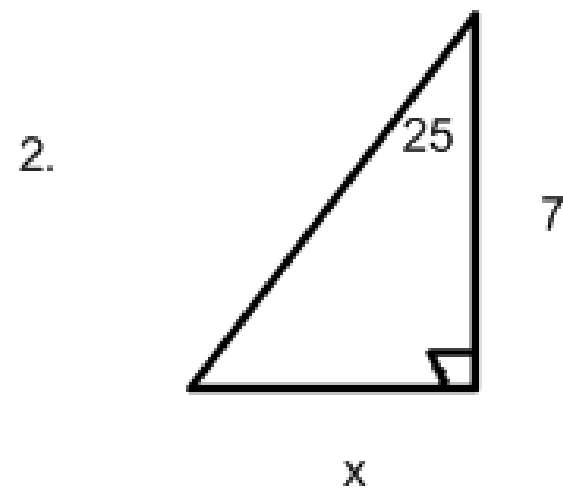


# Finding Missing Side Comp Check



Sept 10th

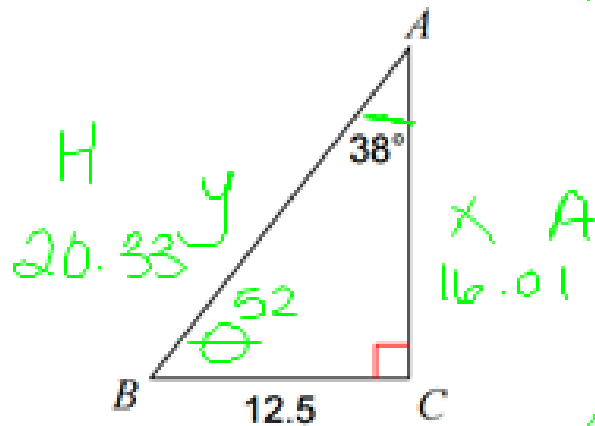


## Intro to Right Angle Trig

### **Learning Target:**

1. I can find the missing side of a right angle triangle using Trig ratios
2. I can find the missing angle of a right angle triangle using Trig ratios.

Solve for all unknown sides and angles:



All interior angles =  $180^\circ$

$$38 + 90 + \theta = 180$$

$$128 + \theta = 180$$

$$\begin{array}{r} -128 \\ -128 \end{array}$$

$$\theta = 52$$

$$\tan \theta = \frac{O}{A}$$

$$x \cdot \tan 38 = \frac{12.5}{x}$$

$$0.781 = \frac{12.5}{x}$$

$$x = \frac{12.5}{0.781}$$

$$x = 16.01$$

$$\sin \theta = \frac{O}{H}$$

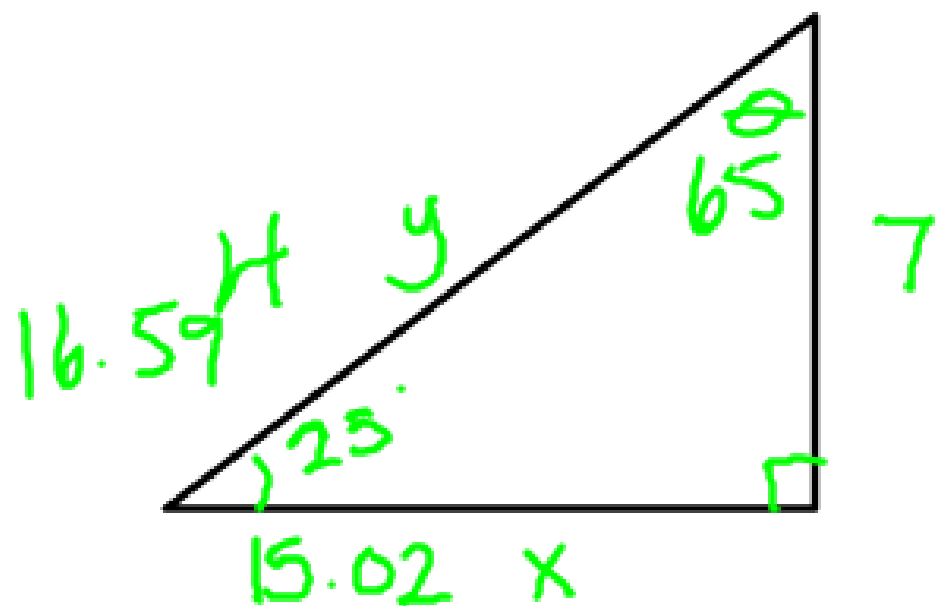
$$\sin 38 = \frac{12.5}{y}$$

$$y \cdot 0.615 = \frac{12.5}{y}$$

$$0.615y = 12.5$$

$$y = \frac{12.5}{0.615}$$

$$y = 20.33$$



$$\tan 25 = \frac{O}{A}$$

$$\therefore \tan 25 = \frac{7}{x}$$

$$x(0.466) = 7$$

$$\frac{0.466x}{0.466} = \frac{7}{0.466}$$

$$x = 15.02$$

$$25 + 90 + \theta = 180$$

$$115 + \theta = 180$$

$$-115 \quad -115$$

$$\theta = 65^\circ$$

$$\sin 25 = \frac{O}{H}$$

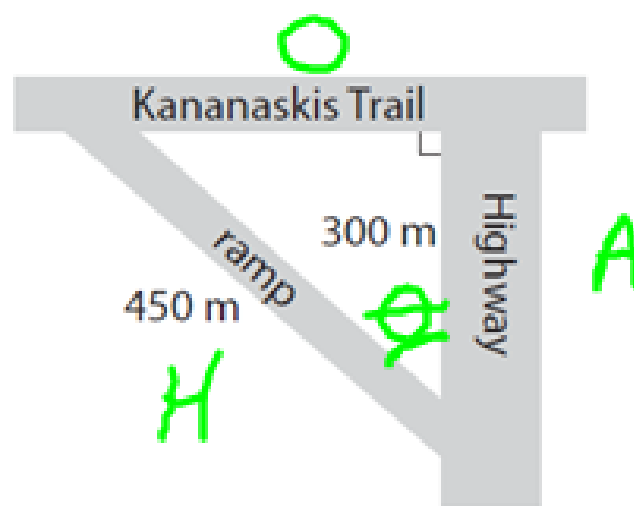
$$\sin 25 = \frac{7}{y}$$

$$y \cdot 0.420 = \frac{7}{y} \cdot y$$

$$\frac{0.420y}{0.420} = \frac{7}{0.420}$$

$$y = 16.59$$

A highway construction crew is repairing the Kananaskis Trail on-ramp for the Trans-Canada highway in Alberta. The length of the ramp is 450 m, and it joins the highway 300 m from the Kananaskis Trail. What angle does the ramp make with the highway, to the nearest degree?



$$\cos \theta = \frac{A}{H}$$

$$\cos \theta = \frac{300}{450}$$

$$\cos \theta = 0.667$$

$$\cos^{-1}(\cos \theta) = \cos^{-1}(0.667)$$

$$\theta = 48.16$$

Jana Lee is a cartographer. She is creating a map of a new housing development. She needs to include the angles of intersection on the map. Given the length of Sunnyside Street and Sea Way, calculate the angle between the two streets.

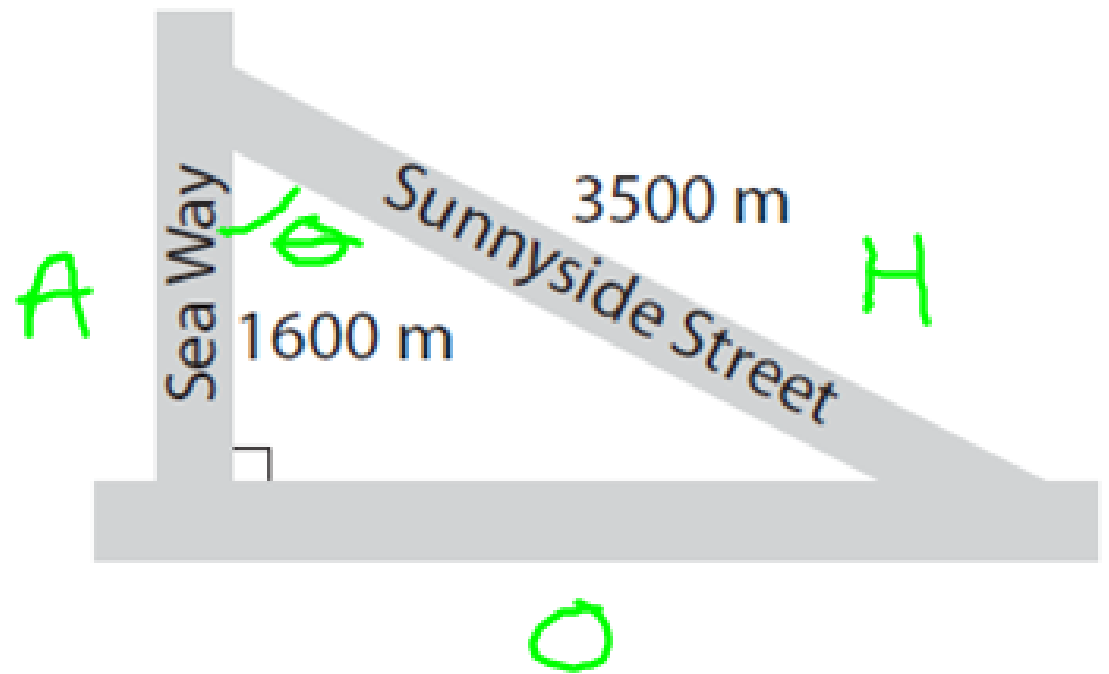
$$\cos \theta = \frac{A}{H}$$

$$\cos \theta = \frac{1600}{3500}$$

$$\cos \theta = 0.457$$

$$\cos^{-1}(\cos \theta) = \cos^{-1}(0.457)$$

$$\theta = 62.80^\circ$$



Homework:

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