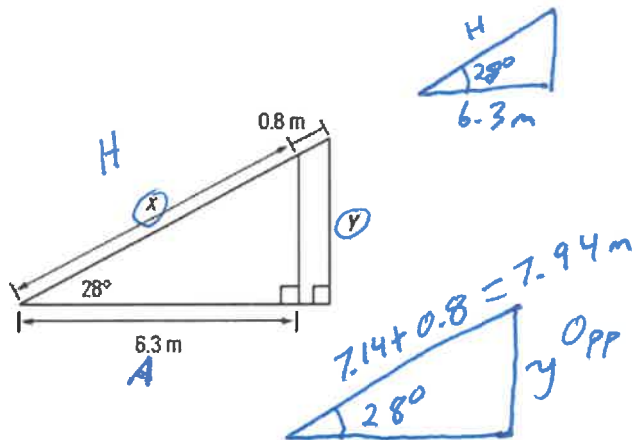


Solving Complex Triangles Notes

Trigonometric Ratios in Complex Situations

In this section, you will use trigonometric ratios to solve problems in contexts that require multiple steps.

Ex. 1: Find each or the indicated sides.



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

$$\frac{\cos 28^\circ}{1} = \frac{6.3}{x}$$

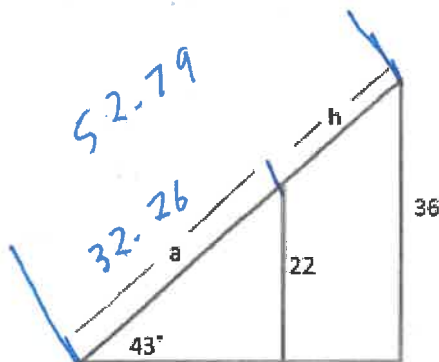
$$x = 7.14 \text{ m}$$

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

$$\frac{\sin 28^\circ}{1} = \frac{y}{7.94 \text{ m}}$$

$$y = 3.73 \text{ m}$$

Show you know



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

$$\frac{\sin 43^\circ}{1} = \frac{22}{a}$$

$$a = 32.26$$

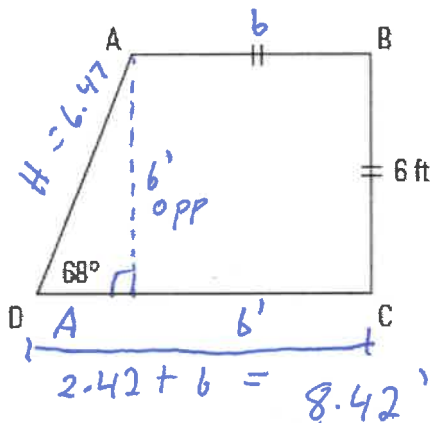
$$\sin = \frac{O}{H}$$

$$\frac{\sin 43^\circ}{1} = \frac{36}{x}$$

$$x = 52.79$$

$$\begin{aligned} & \frac{h}{52.79 - 32.26} \\ & = 20.53 \end{aligned}$$

Ex. 2: A piece of plywood is cut into the shape shown. Calculate the dimensions of the plywood.



$$\sin = \frac{o}{H}$$

$$\frac{\sin 68^\circ}{1} = \frac{b}{H}$$

$$H = 6.47'$$

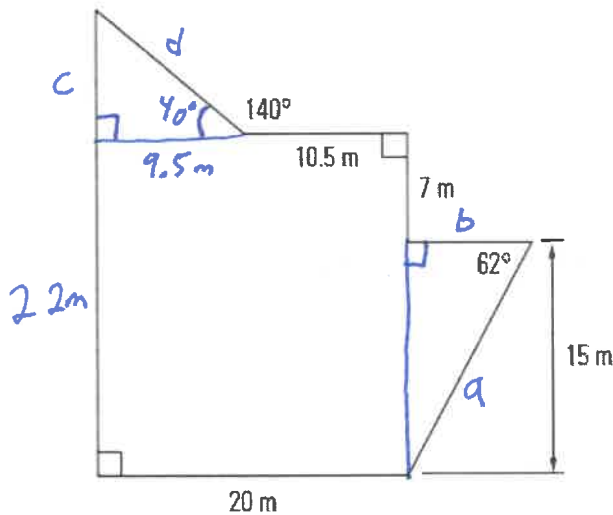
$$\tan = \frac{o}{A}$$

$$\frac{\tan 68^\circ}{1} = \frac{b}{A}$$

$$A = 2.42'$$

Show you know:

Justin wants to line the perimeter of his patio with a paving stone border. What is the perimeter of his patio?



$$\frac{a}{\sin} = \frac{o}{H}$$

$$\frac{\sin 62^\circ}{1} = \frac{15}{a}$$

$$a = 16.99m$$

$$\frac{c}{\tan} = \frac{o}{A}$$

$$\frac{\tan 40^\circ}{1} = \frac{c}{9.5}$$

$$c = 7.97m$$

$$\frac{b}{\tan} = \frac{o}{A}$$

$$\frac{\tan 62^\circ}{1} = \frac{15}{b}$$

$$b = 7.98m$$

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

$$\frac{\cos 40^\circ}{1} = \frac{9.5}{d}$$

$$d = 12.40m$$

$$P = 20 + 22 + 7.97 + 12.4$$

$$+ 10.5 + 7 + 7.98 + 16.99$$

$$P = 104.84m$$