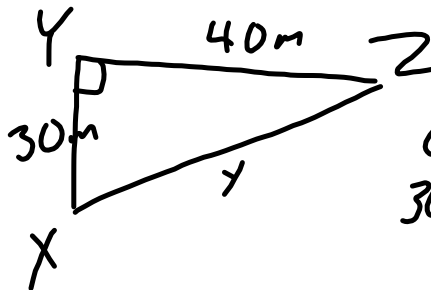
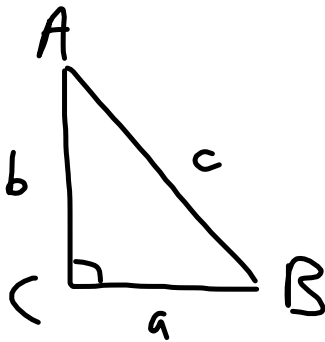


# TRIGONOMETRY

## REVIEW: PYTHAGORAN THEOREM

$$a^2 + b^2 = c^2$$

↖ Hyp



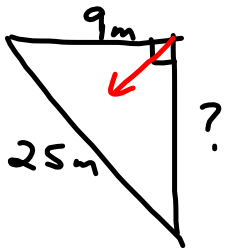
$$a^2 + b^2 = c^2$$

$$30^2 + 40^2 = y^2$$

$$2500 = y^2$$

$$\sqrt{2500} = y$$

$$50m = y$$



$$a^2 + b^2 = c^2$$

$$9^2 + b^2 = 25^2$$

$$81 + b^2 = 625$$

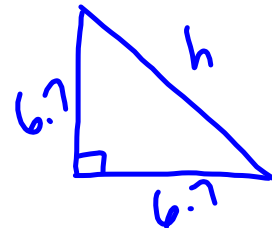
$$b^2 = 625 - 81$$

$$b^2 = 544$$

$$b = \sqrt{544}$$

$$b = 23.3m$$

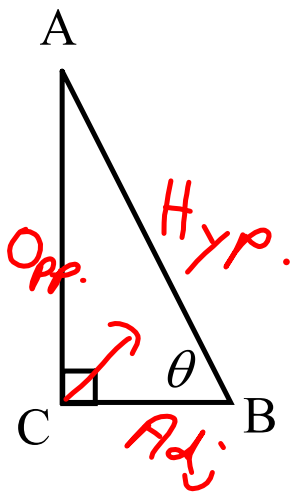
p.2  
#1-3



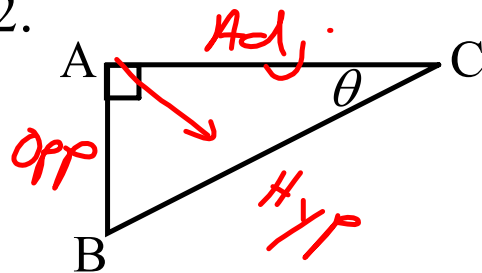
## Warm up

Name the Hypotenuse, Opposite and Adjacent of  $\theta$  for each triangle:

1.



2.

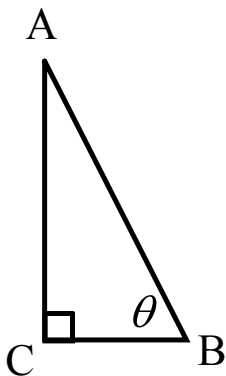


## 1.1 SOH CAH TOA

Primary Trigonometric Angles:

--only apply to right angle triangles

--are ratios (like fractions) of 2 sides of the triangles with reference to a particular angle



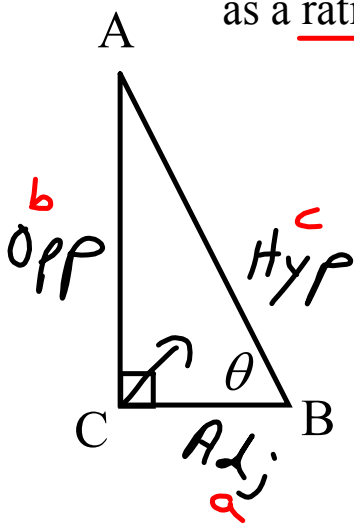
$$\sin\theta = \frac{\textit{opposite}}{\textit{hypotenuse}} \quad \text{SOH}$$

$$\cos\theta = \frac{\textit{adjacent}}{\textit{hypotenuse}} \quad \text{CAH}$$

$$\tan\theta = \frac{\textit{opposite}}{\textit{adjacent}} \quad \text{TOA}$$

Practice naming the triangle.

For the triangle given, write the primary trig ratios of  $\theta$  as a ratio of sides.



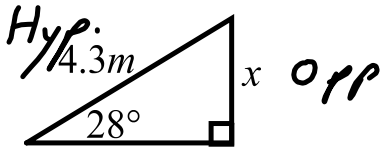
$$\sin\theta = \frac{AC}{AB} \text{ OR } \frac{b}{c}$$

$$\cos\theta = \frac{BC}{AB} = \frac{a}{c}$$

$$\tan\theta = \frac{AC}{BC} = \frac{b}{a}$$

## SOH CAH TOA

Use primary Trig ratios to calculate the unknown side length.

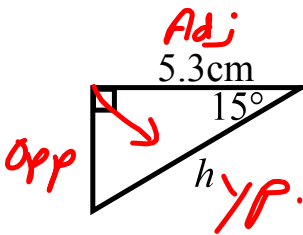


$$\frac{\sin 28}{1} = \frac{x}{4.3}$$

$$\sin 28 \times 4.3 = x$$

$$2.0m = x$$

In your groups solve the last two: What is the difference between the two questions?

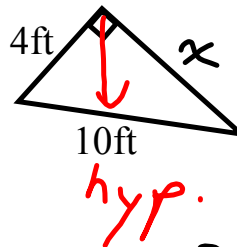


$$\frac{\cos 15}{1} = \frac{5.3}{h}$$

$$\cos 15 \times h = 5.3$$

$$h = \frac{5.3}{\cos 15}$$

$$h = 5.5 \text{ cm}$$



SOH  
CAH  
TOA

$$a^2 + b^2 = c^2$$

$$4^2 + b^2 = 10^2$$

$$b^2 = 100 - 16$$

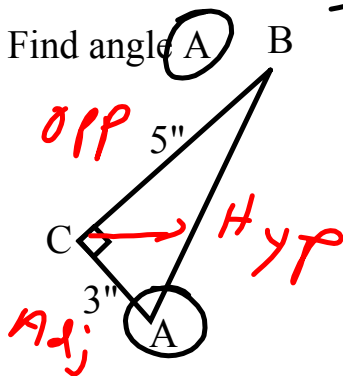
$$b^2 = 84$$

$$b = 9.2 \text{ ft.}$$

Calculate for the indicated angle

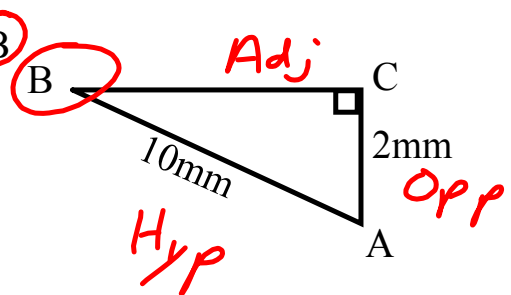
SOH CAH TOA

Find angle A



$$\begin{aligned} \underline{\text{TAN}} A &= \frac{5}{3} \\ A &= \text{TAN}^{-1}\left(\frac{5}{3}\right) \\ &= 59^\circ \end{aligned}$$

Find angle B



$$\begin{aligned} \text{SIN } B &= \frac{2}{10} \\ B &= \text{SIN}^{-1}\left(\frac{2}{10}\right) \\ B &= 12^\circ \end{aligned}$$

Homework: p. 8 ~~#1-7~~ -- hand in when done.  
#3-7

p. 2 #1-3