

$\theta = \text{Theta}$ *touches angle, not hypotenuse*

Hypotenuse opposite the largest angle

SOH CAH TOA

<u>S</u> in	<u>C</u> os	<u>T</u> an
<u>opp</u>	<u>adj</u>	<u>opp</u>
<u>hyp</u>	<u>hyp</u>	<u>adj</u>

Trigonometric Ratios

Right Triangle (required)

ratio

↓
sine

angle-pt of reference

$$\sin \theta = \frac{\text{opposite side}}{\text{hypotenuse}}$$

$$\sin \theta = \frac{a}{c}$$

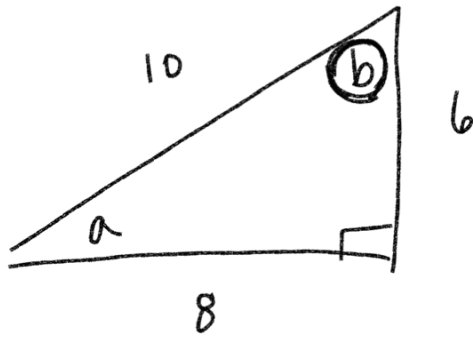
$$\text{Cosine } \theta = \frac{\text{adjacent side}}{\text{hypotenuse}}$$

$$\cos \theta = \frac{b}{c}$$

$$\text{tangent } \theta = \frac{\text{opposite side}}{\text{adjacent side}}$$

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

$$\tan \theta = \frac{\sin \theta}{\cos \theta} = \frac{\frac{a}{c}}{\frac{b}{c}} \quad \begin{matrix} \cancel{c} \\ \cancel{c} \end{matrix} \therefore \frac{a}{b} = \frac{a}{b}$$



SOH CAH TOA
 ↑ ↑ ↑
 tan opp adj

$$\sin b = \frac{\text{opp}}{\text{hyp}} = \frac{8 \div 2}{10 \div 2} = \frac{4}{5}$$

$$\cos b = \frac{\text{adj}}{\text{hyp}} = \frac{6 \div 2}{10 \div 2} = \frac{3}{5}$$

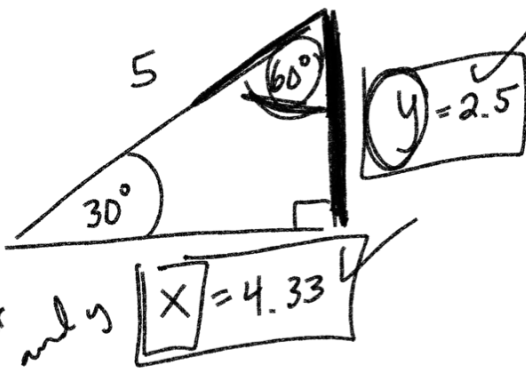
$$\tan b = \frac{\text{opp}}{\text{adj}} = \frac{8 \div 2}{6 \div 2} = \frac{4}{3}$$

$$\sin a = \frac{\text{opp}}{\text{hyp}} = \frac{6}{10} = \frac{3}{5}$$

$$\cos a = \frac{\text{adj}}{\text{hyp}} = \frac{8}{10} = \frac{4}{5}$$

$$\tan a = \frac{\text{opp}}{\text{adj}} = \frac{6}{8} = \frac{3}{4}$$

inverse



Solve for x and y

$$5(\sin 30^\circ) = \left(\frac{y}{5}\right)5$$

$$y = 5 \sin 30^\circ$$

$$5(0.5) = \boxed{2.5}$$

$$5(\cos 30^\circ) = \left(\frac{x}{5}\right)5$$

$$x = 5 \cos 30^\circ$$

$$5(0.866) = \boxed{4.33}$$

$$\sin 60^\circ = \frac{\text{opp}}{\text{hyp}} = \frac{x}{5}$$

$$5(\sin 60^\circ) = \left(\frac{x}{5}\right)5$$

$$5(\sin 60) = 4.33$$

$$\cos 60^\circ = \frac{\text{adj}}{\text{hyp}} = \frac{y}{5}$$

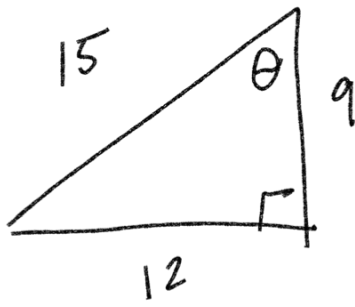
$$\rightarrow 5(\cos 60) = \left(\frac{y}{5}\right)5$$

$$y = \frac{5 \cos 60}{1} = \boxed{2.5}$$

SOH CAH TOA

$$\cos = \frac{\text{Adj}}{\text{Hyp}}$$

①



$$\sin \theta = \frac{12}{15} = \frac{4}{5}$$

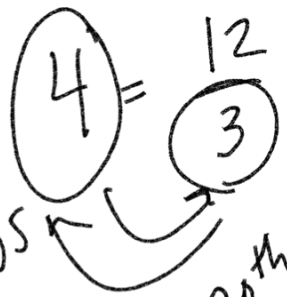
$$\cos \theta = \frac{9}{15} = \frac{3}{5}$$

$$\tan \theta = \frac{12}{9} = \frac{4}{3}$$

SOH CAH **TOA**

$$\cos 70 = 0.342$$

$$\frac{3}{0.342} = 8.77$$



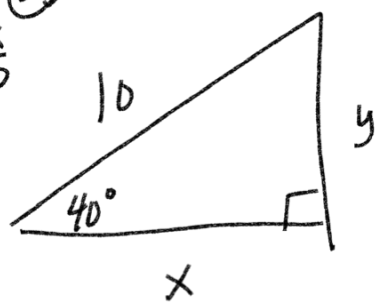
②

$$\cos 40 = \frac{x}{10}$$

$$10 \cos 40 =$$

$$\sin 40 = \frac{y}{10}$$

$$10 \sin 40 =$$



$$x = 7.66$$

$$y = 6.43$$

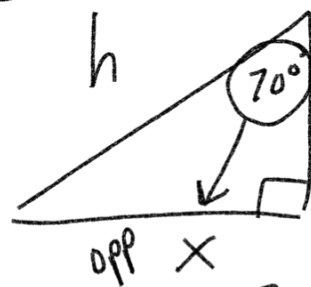
$$4 = \frac{12}{3} \quad 3 = \frac{12}{4}$$

③

$$\tan = \frac{\text{opp}}{\text{adj}}$$

$$\tan 70 = \frac{x}{3}$$

$$3 \tan 70 = x$$



$$x = 8.24$$

$$h = 8.77$$

$$\cos 70 = \frac{3}{h}$$

$$\left[h = \frac{3}{\cos 70} \right]$$



$$3 = \frac{12}{4}$$

$$h = \frac{3}{\cos 70}$$

$$3 \div (\cos 70) =$$

HW
 Supplemental WS
 Online HW 30
 Quiz 30 } May 20th
 HW/Q 28 May 13th
 Test! May 20th

