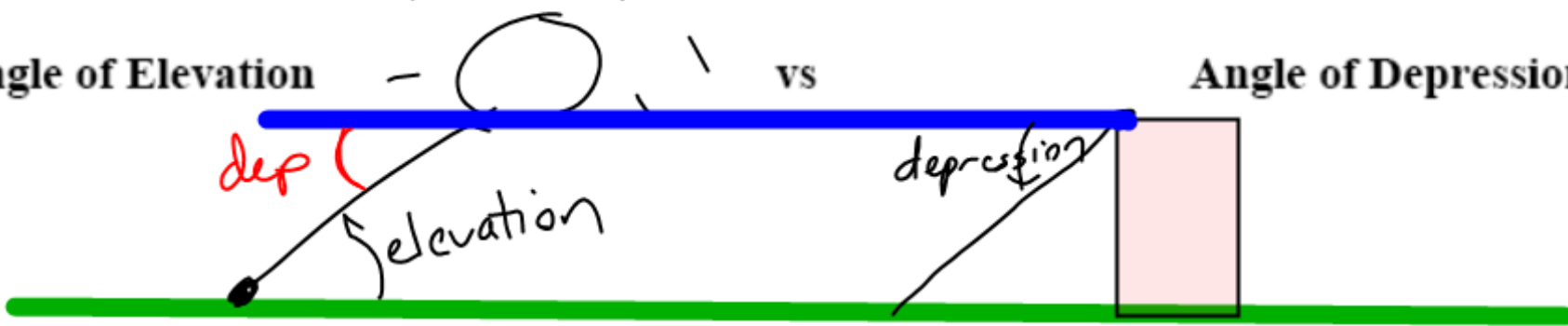


An Introduction to Trigonometry...

Angle of Elevation

vs

Angle of Depression



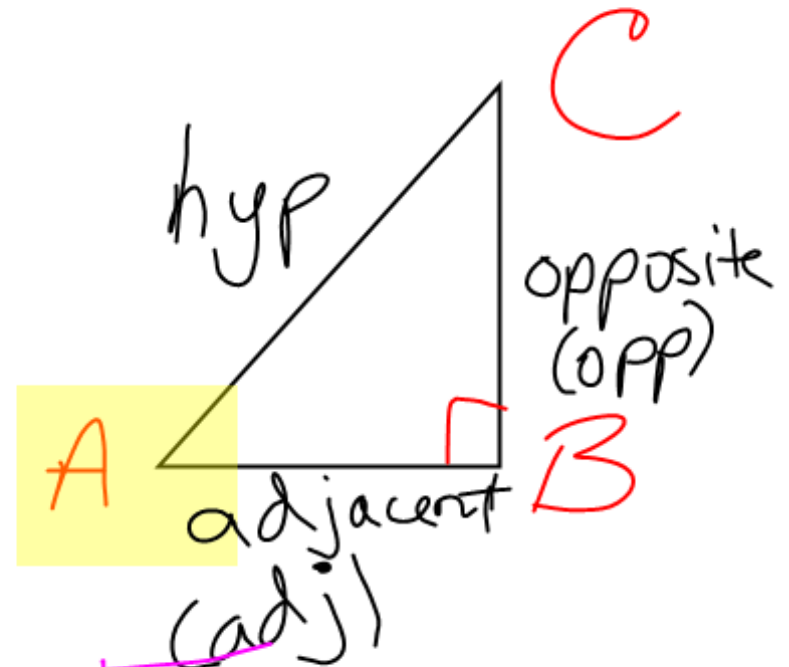
depression = elevation

In a *Right Triangle*, we define the following ratios:

sine: $\sin A = \frac{\text{opp}}{\text{hyp}}$

cosine: $\cos A = \frac{\text{adj}}{\text{hyp}}$

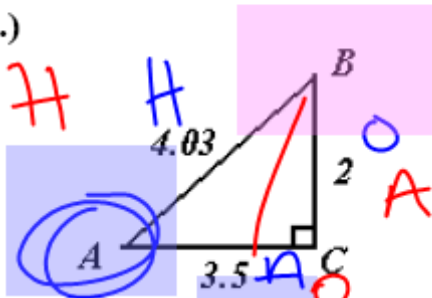
tangent: $\tan A = \frac{\text{opp}}{\text{adj}}$



SOH CAH TOA
 Soak a toe - a

In each triangle, find $\sin A$, $\cos A$, $\tan A$, $\sin B$, $\cos B$, and $\tan B$.

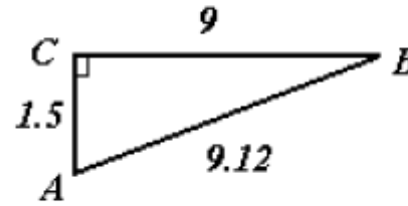
1.)



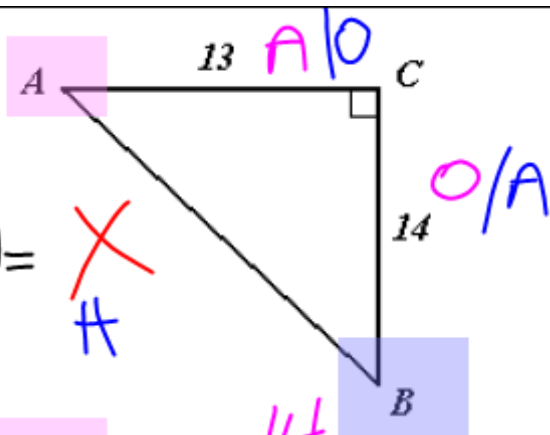
$$\begin{aligned} \sin A &= \frac{2}{4.03} \\ \cos A &= \frac{3.5}{4.03} \\ \tan A &= \frac{2}{3.5} \end{aligned}$$

$$\begin{aligned} \sin B &= \frac{3.5}{4.03} \\ \cos B &= \frac{2}{4.03} \\ \tan B &= \frac{3.5}{2} \end{aligned}$$

2.)



2.) H
 $19 \cdot 10 = X$
 H



H
 $\sin A = \frac{14}{19 \cdot 10}$

A
 $\cos A = \frac{13}{19 \cdot 10}$

H
 $\tan A = \frac{14}{13}$

$\sin B = \frac{13}{19 \cdot 10}$

$\cos B = \frac{14}{19 \cdot 10}$

$\tan B = \frac{13}{14}$

$$13^2 + 14^2 = x^2$$

$$169 + 196 = x^2$$

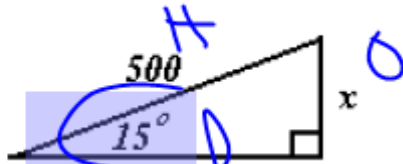
$$365 = x^2$$

$$19 \cdot 10 = x$$

An Introduction to Trigonometry... Part II

Find the value of the variable(s) in each problem.

1.)



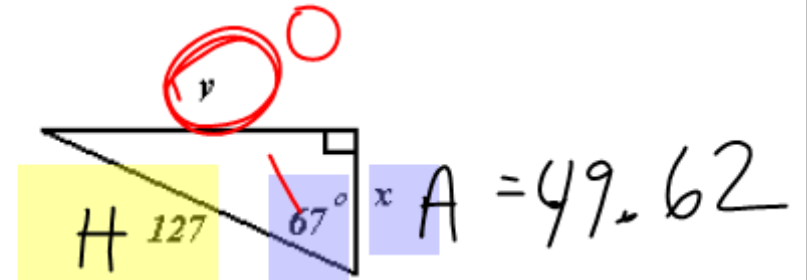
SOH

$$\sin 15^\circ = \frac{x}{500}$$

$$500 \cdot 0.2588 = \frac{x}{500} \cdot 500$$

$$x = 129.41$$

2.)



AH

$$\cos 67^\circ = \frac{x}{127}$$

$$127 \cdot 0.3907 = \frac{x}{127} \cdot 127$$

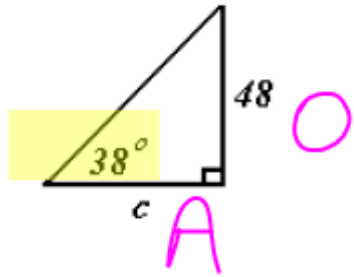
$$x = 49.62$$

$$\sin 67^\circ = \frac{y}{127}$$

$$127 \cdot 0.9205 = \frac{y}{127} \cdot 127$$

$$y = 116.90$$

3.)



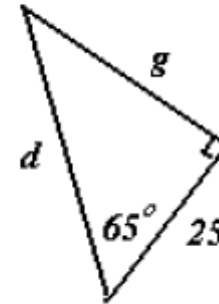
$$\tan 38 = \frac{48}{c}$$

$$\cancel{0.7813} = \frac{48}{c}$$

$$\frac{48}{0.7813} = \frac{0.7813 c}{0.7813}$$

$$c = 61.44$$

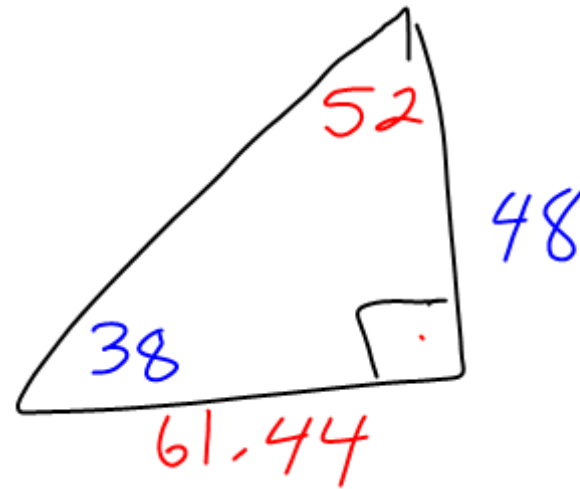
4.)



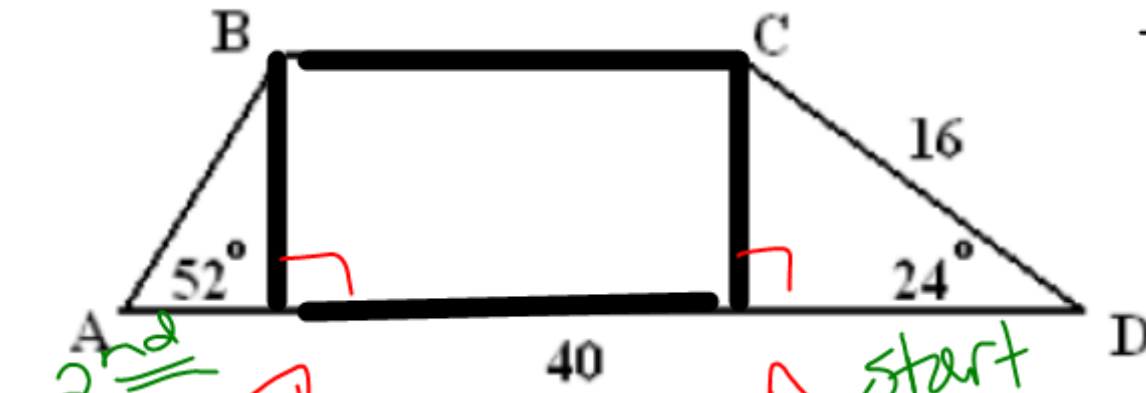
$$g = 53.61$$

$$d = \underline{\underline{59.16}}$$

(#5) $z = 14.29$
 $w = 26.23$



6.) Given the trapezoid, find BC and AB.



$$AB = z$$

$$BC = 40 - y - x$$

