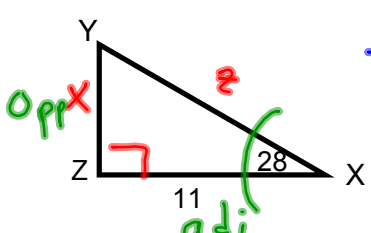


Day 2 on Right Triangle Trigonometry

Ex 1) Solve triangle XYZ. Round side lengths to the nearest tenth and angles to the nearest degree.

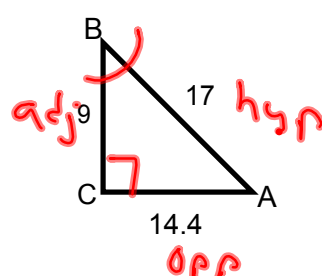


$\frac{90}{-28}$   
 $\frac{11}{5.8} = \tan 28$   
 $11 + \tan 28 = x$   
 $5.8 = x$

$5.8^2 + 11^2 = z^2$   
 $154.64 = z^2$   
 $12.4 = z$

$Y = 62^\circ$   
 $z = 12.4$   
 $x = 5.8$

Ex 2) Solve triangle ABC.



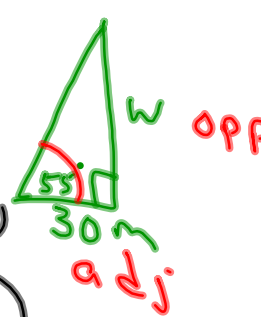
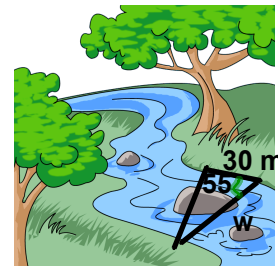
$\tan B = \frac{14.4}{9}$   
 $\tan^{-1}\left(\frac{14.4}{9}\right) = B$   
 $58^\circ = B$

$\frac{90}{-58}$   
 $32^\circ$

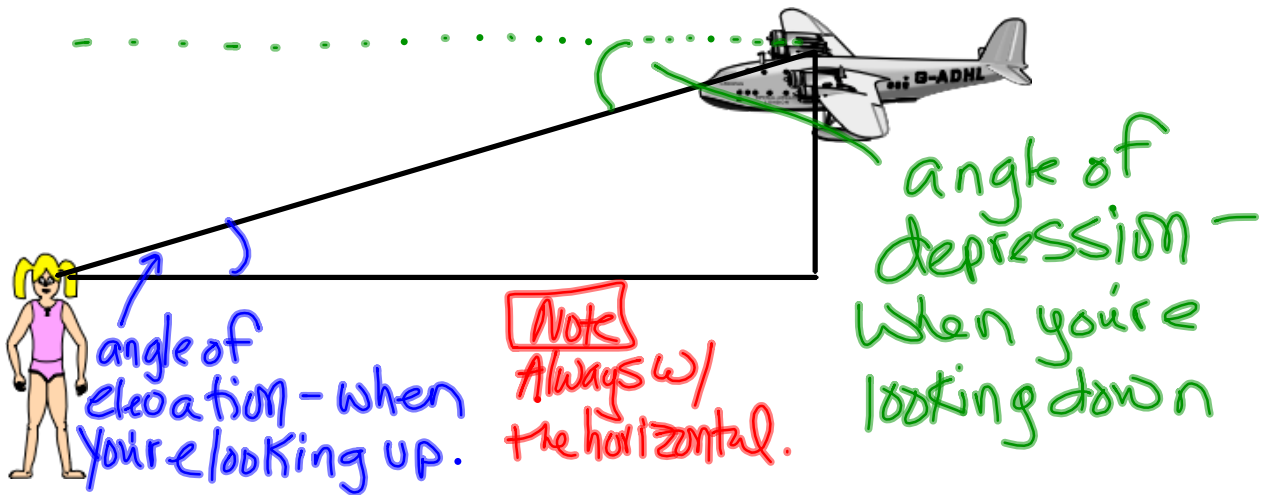
$A = 32^\circ$   
 $B = 58^\circ$

Ex 3) Find the width of a river using the diagram.

$\tan 55 = \frac{w}{30}$   
 $30 \tan 55 = w$   
 $42.8m = w$

Some story problems will talk about an angle of elevation or angle of depression.



Ex 4) Skiing: A ski run has an angle of elevation of 15.7 degrees and a vertical drop of 1800 feet. Estimate the length of this run.



$$x \cdot \sin 15.7 = \frac{1800}{x}$$

$$\frac{x \sin 15.7}{\sin 15.7} = \frac{1800}{\sin 15.7}$$

$$x = 6,651.9 \text{ ft}$$