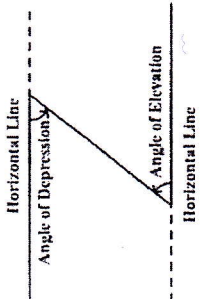
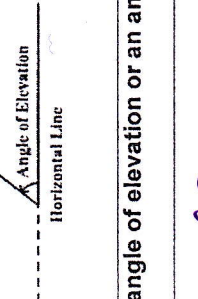
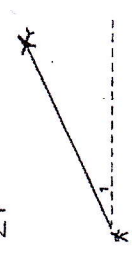
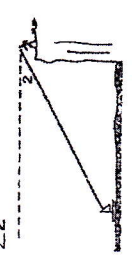
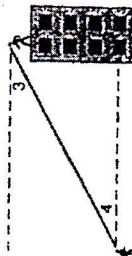

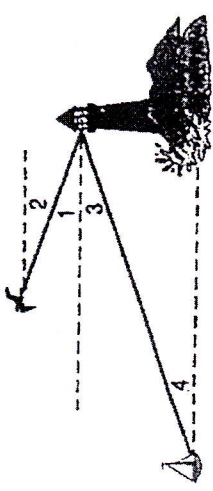
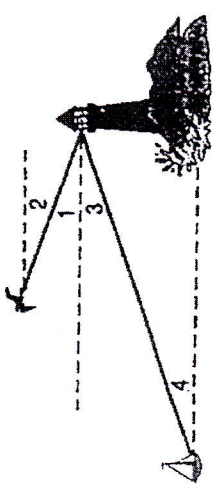
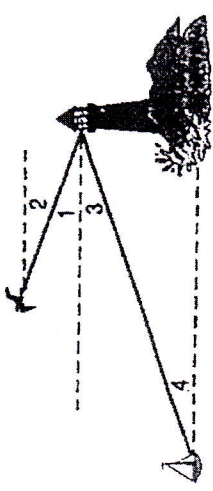
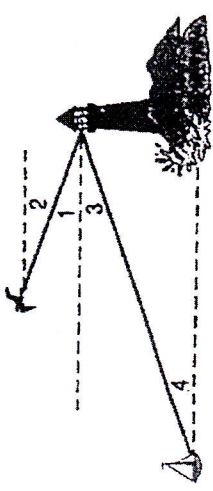


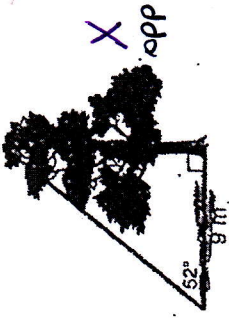
NOTES 9.4

ANGLES OF ELEVATION AND DEPRESSION

<p>Angle of Elevation: Formed by a horizontal line and a line of sight above it</p>	
<p>Angle of Depression: Formed by a horizontal line and a line of sight below it</p>	
<p>Example 1: Classify each angle as an angle of elevation or an angle of depression.</p>	
<p>a. $\angle 1$</p> 	<p>b. $\angle 2$ of Depression</p> 
<p>c. $\angle 3$ of Elevation</p>	
<p>$\angle 4$ of Elevation</p>	
<p>d. $\angle 1$ of Elevation</p>	
<p>$\angle 2$ of Depression</p>	
<p>$\angle 3$ of Depression</p>	
<p>$\angle 4$ of Elevation</p>	

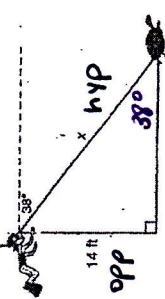
Angles of elevation and depression can be used with trig functions to solve problems.

Example 2: When the angle of elevation to the sun is 52° , a tree casts a shadow that is 9 meters long. What is the height of the tree rounded to the nearest tenth of a meter?



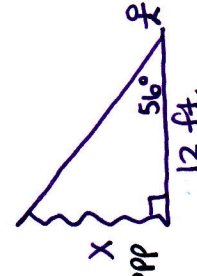
$\tan 52^\circ = \frac{X}{9}$
 $X = 11.5 \text{ m}$

Example 3: A person snorkeling sees a turtle on the ocean floor at an angle of depression of 38° . She is 14 feet above the ocean floor. How far is the person from the turtle rounded to the nearest foot?



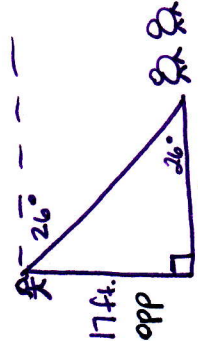
$\sin 38^\circ = \frac{14}{X}$
 $X = 23 \text{ ft.}$

Example 4: Jared is standing 12 feet from a rock-climbing wall. When he looks up to see his friend ascend the wall, the angle of elevation is 56° . How high up the wall is his friend rounded to the nearest foot?



$\tan 56^\circ = \frac{X}{12}$
 $X = 18 \text{ ft.}$

Example 5: Maria is looking out a 17-foot high window and sees two deer. The angle of depression to the deer is 26° . What is the horizontal distance from Maria to the deer rounded to the nearest foot?



$\tan 26^\circ = \frac{17}{X}$
 $X = 35 \text{ ft.}$