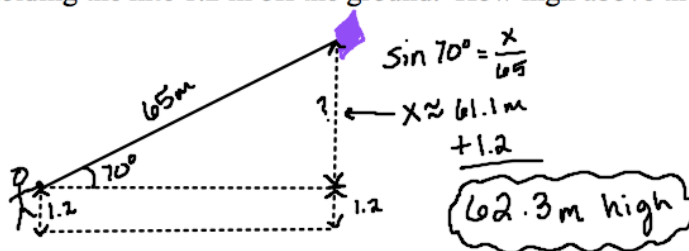


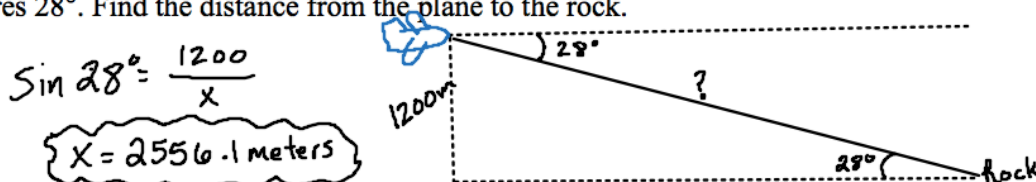
Angle of Elevation & Depression Trig Worksheet

***Draw and label a picture for each problem**

1. Brian's kite is flying above a field at the end of 65 m of string. If the angle of elevation to the kite measures 70° , and Brian is holding the kite 1.2 m off the ground. How high above the ground is the kite flying?

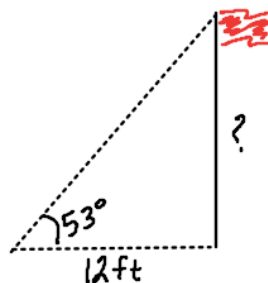


2. From an airplane at an altitude (height) of 1200 m, the angle of depression to a rock on the ground measures 28° . Find the distance from the plane to the rock.



3. From a point on the ground 12 ft from the base of a flagpole, the angle of elevation of the top of the pole measures 53° . How tall is the flagpole?

$\tan 53^\circ = \frac{x}{12}$
 $x = 15.9\text{ft}$

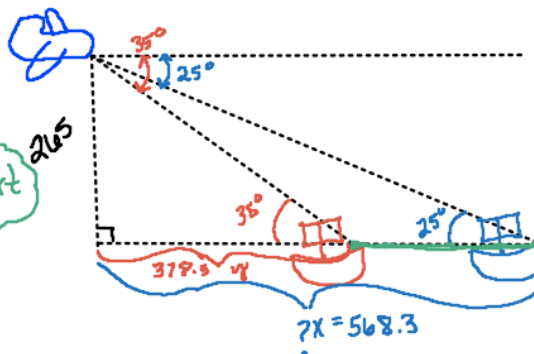


4. From a plane flying due east at 265 m above sea level, the angles of depression of two ships sailing due east measure 35° and 25° . How far apart are the ships?

$\tan 25^\circ = \frac{265}{x}$
 $x = 568.3$

$\tan 35^\circ = \frac{265}{y}$
 $y = 378.5$

568.3
 $- 378.5$
189.8m apart



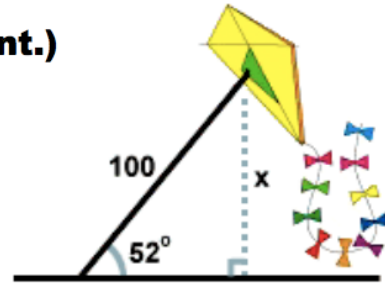
Angle of Elevation & Depression Worksheet (Cont.)

Find all values to the nearest tenth.

5. A man flies a kite with a 100 foot string. The angle of elevation of the string is 52° . How high off the ground is the kite?

$$\sin 52^\circ = \frac{x}{100}$$

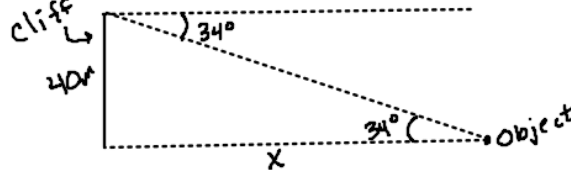
$$x = 78.8 \text{ ft}$$



6. From the top of a vertical cliff 40 m high, the angle of depression of an object that is level with the base of the cliff is 34° . How far is the object from the base of the cliff?

$$\tan 34^\circ = \frac{40}{x}$$

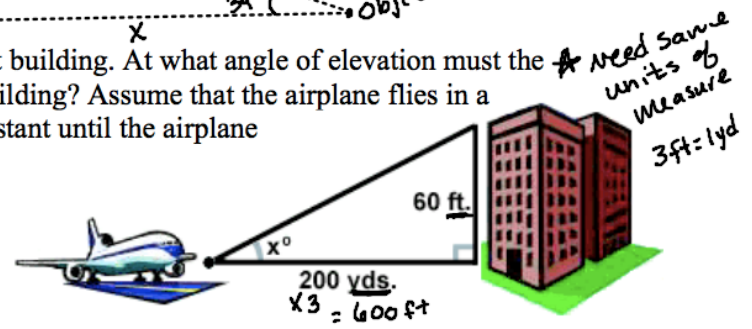
$$x = 59.3 \text{ m}$$



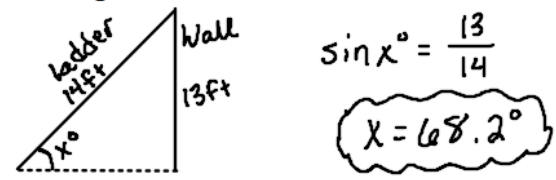
7. An airplane takes off 200 yards in front of a 60 foot building. At what angle of elevation must the plane take off in order to avoid crashing into the building? Assume that the airplane flies in a straight line and the angle of elevation remains constant until the airplane flies over the building.

$$\tan x = \frac{60}{600}$$

$$x = 5.7^\circ$$



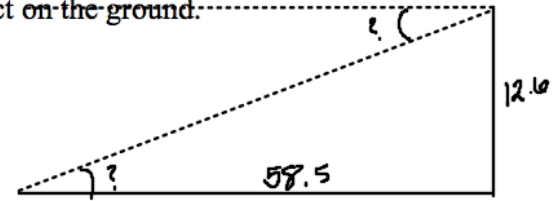
8. A 14 foot ladder is used to scale a 13 foot wall. At what angle of elevation must the ladder be situated in order to reach the top of the wall?



9. A person stands at the window of a building so that his eyes are 12.6 m above the level ground. An object is on the ground 58.5 m away from the building on a line directly beneath the person. Compute the angle of depression of the person's line of sight to the object on the ground.

$$\tan x^\circ = \frac{12.6}{58.5}$$

$$x = 12.2^\circ$$



10. A ramp is needed to allow vehicles to climb a 2 foot wall. The angle of elevation in order for the vehicles to safely go up must be 30° or less, and the longest ramp available is 5 feet long. Can this ramp be used safely?

$$\sin x = \frac{2}{5}$$

$$x^\circ = 24^\circ$$

Yes

