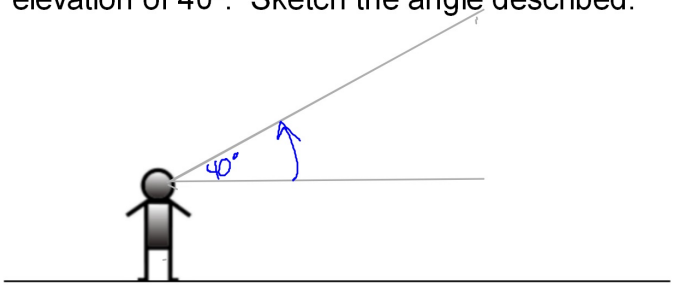
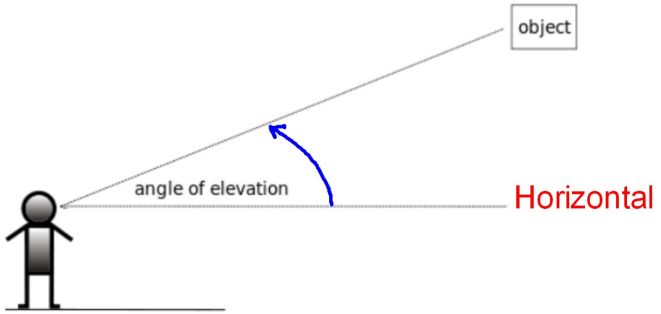
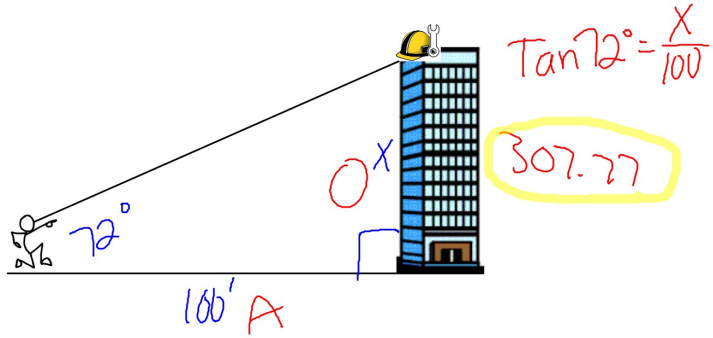
You are on the street and look up with an angle of elevation of 40°. Sketch the angle described.



Angle of Elevation: Angle measured from the Horizontal upwards.



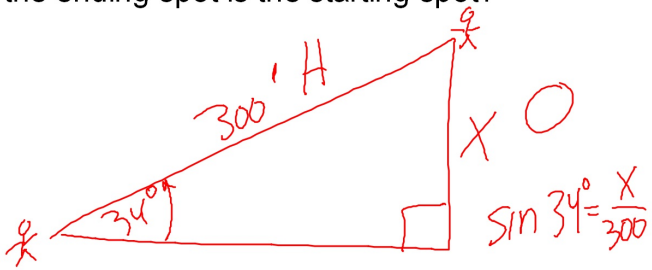
1. You are on the street and look up with an angle of elevation to see an iron worker on the top of a building under construction with an angle of elevation of 72°. If you are 100 feet from the front door of the building find the height of the building.



$\tan 72° = \frac{X}{100}$

307.77

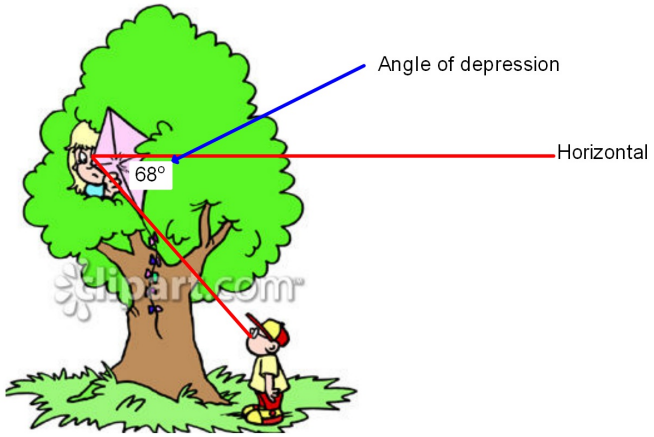
2. On vacation you ride a zipline that is 300 feet long. Your sister is waiting at the top ready to go right after you. When you unclip after your ride you see your waiting sister with an angle of elevation of 34°. How high above the ending spot is the starting spot?



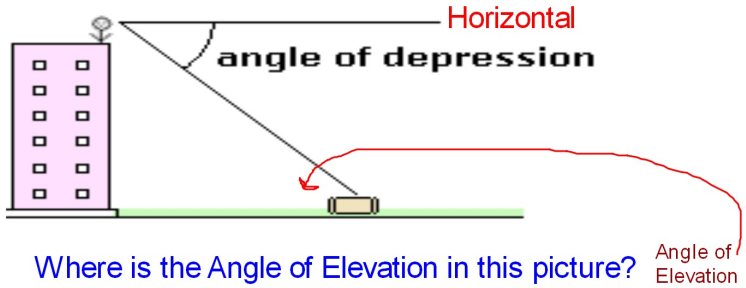
$\sin 34° = \frac{X}{300}$

X=167.76 ft

You are high up in a tree and see your friend with an angle of depression of 68°.



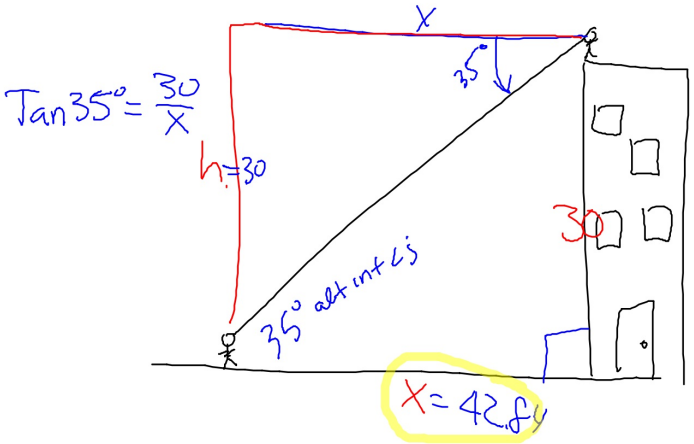
Angle of Depression: Angle measured from the Horizontal downwards.



Where is the Angle of Elevation in this picture? Angle of Elevation

How are the Angles of Elevation and Depression related? alt int ∠s which are ≅

3. You are on the roof of a 30 foot tall building. You see your friend on the ground with an angle of depression of 35°. How far away from the building is your friend?



4. A construction worker is high up on a cell phone tower and is supposed to attach a guy wire to support the tower. The guy wire is anchored into the ground where another worker is standing, 80 feet away from the bottom of the cell tower. If the workerup on the tower sees the worker on the ground with an angle of depression of 71° find the length of the cable needed.