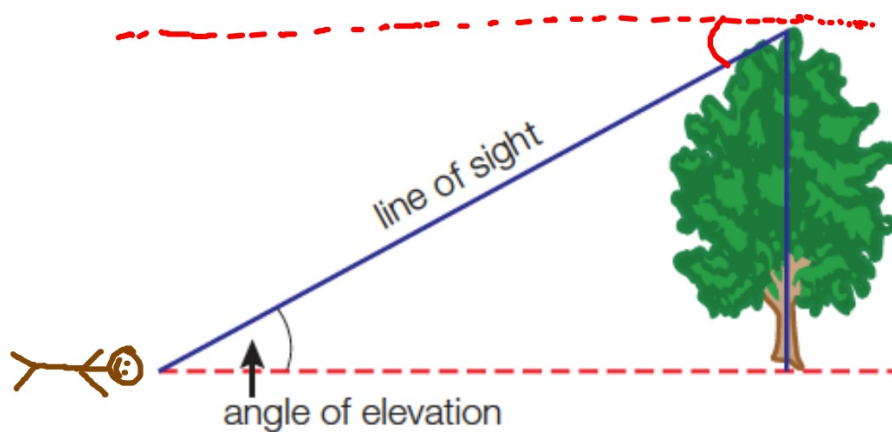
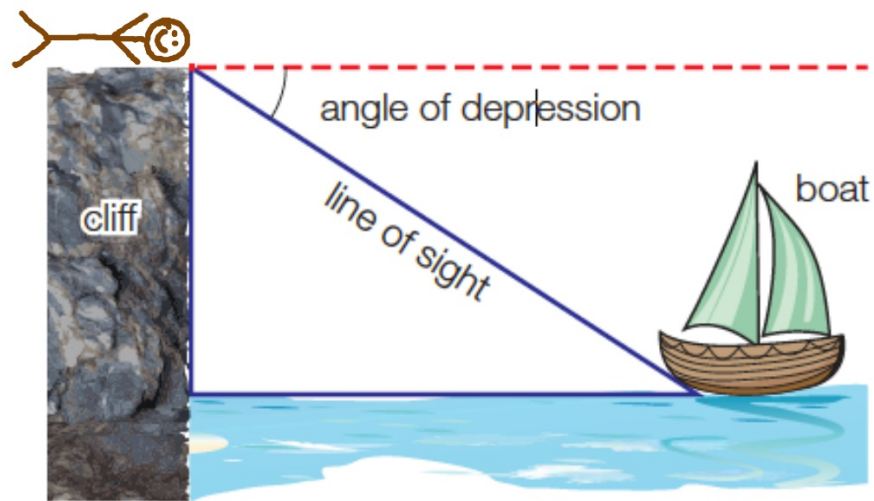


Lesson 15.2 - Angles of Elevation & Depression

If you lie on the ground so that the base of a tree is at eye level and look up, the angle that you look through is called the **angle of elevation**.

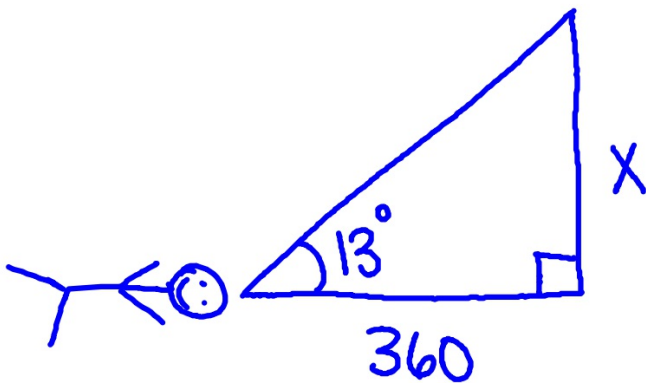


If you lie on the ground at a cliff top and look down at a boat on the water, the angle that you look through is called the **angle of depression**.



EXAMPLE #1

Una is lying down on flat ground, 360 m from the base of a television mast. If the angle of elevation from Una to the top of the mast is 13.0° , how high is the mast?



$$(360)\tan 13 = \frac{X}{\cancel{360}}(\cancel{360})$$

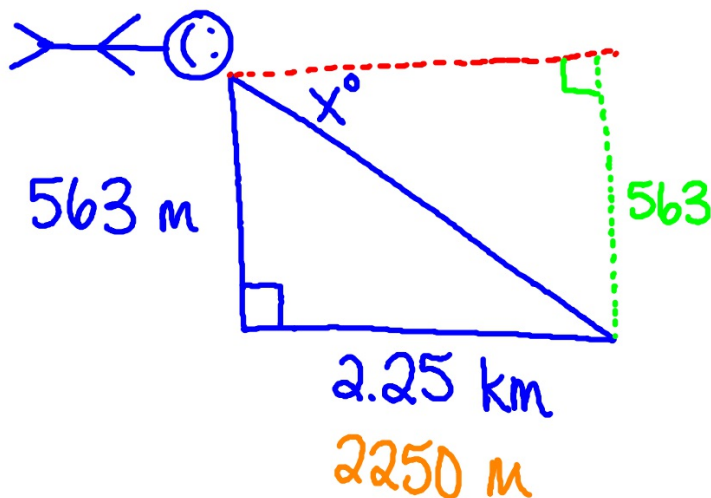
$$360\tan 13 = X$$

$$\boxed{83.1\text{m} = X}$$

EXAMPLE #2

Alexis is lying down on top of a hill, looking at a garage in the village below. If the hill is 563 m high, and the village is 2.25 km away, calculate the angle of depression.

Note: 1000 m = 1 km



$$\tan x = \frac{563}{2250}$$

$$x = \tan^{-1}\left(\frac{563}{2250}\right)$$

$$x = 14.0^\circ$$