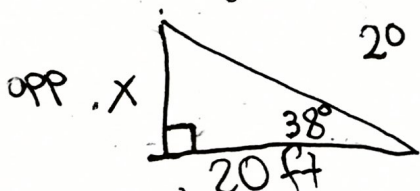
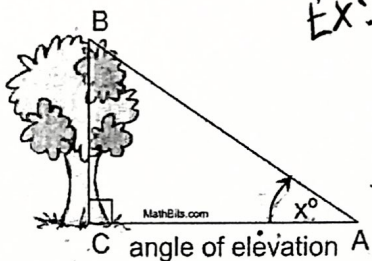


Angle of elevation: upward angle from a horizontal line (usually the ground)

It is always INSIDE the triangle

* keyword: elevate, to lift or raise up

Ex: A person is 20 ft from a tree looks up to the top of the tree with an angle of elevation of 38° . How tall is the tree?



$$20 (\tan 38^\circ) = \left(\frac{x}{20}\right) 20$$

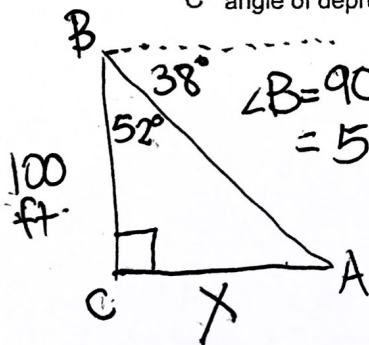
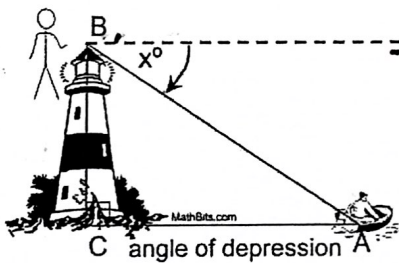
$$x = 20 (\tan 38^\circ) \approx 15.63 \text{ ft}$$

Angle of depression: downward angle made from a horizontal line parallel to the ground.

It is always OUTSIDE the triangle.

* keyword: depress, push down

Ex: A person at the top of the lighthouse looks at a boat with an angle of depression of 38° .



$$\angle B = 90^\circ - 38^\circ = 52^\circ$$

$$100 (\tan 52^\circ) = \left(\frac{x}{100}\right) 100$$

$$x = 100 (\tan 52^\circ) \approx 127.99 \text{ ft}$$