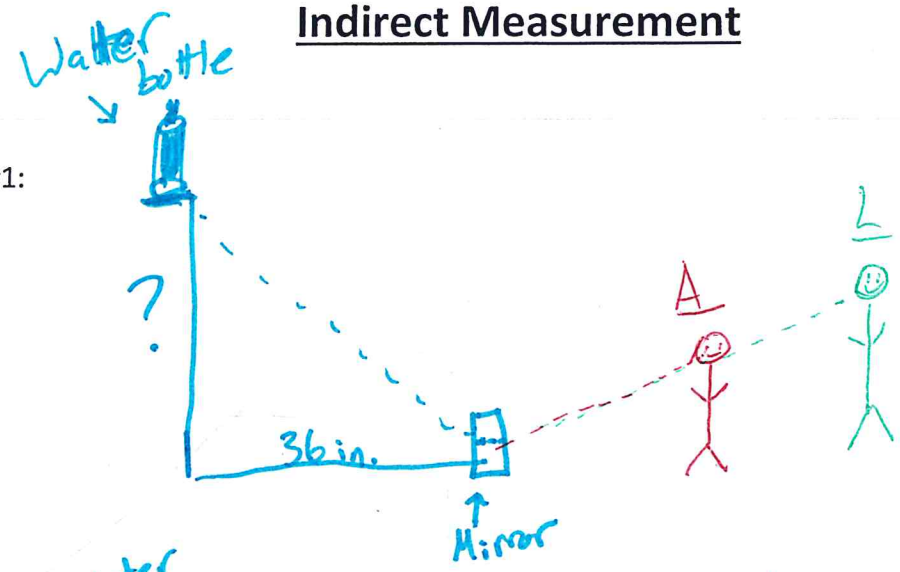
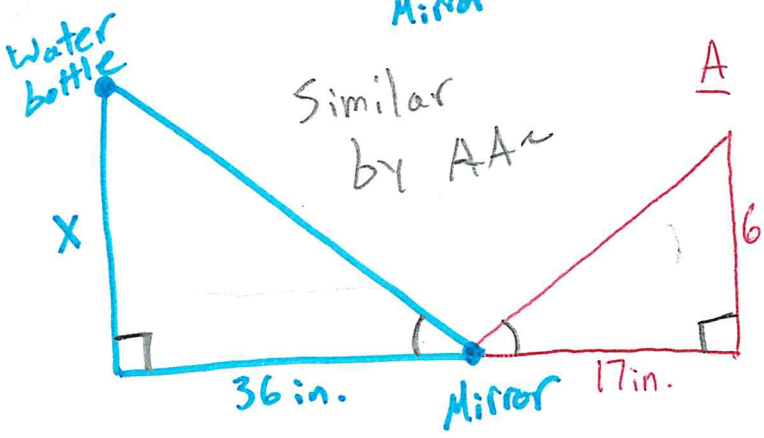
Indirect Measurement

Sketch #1:



Sketch #2:



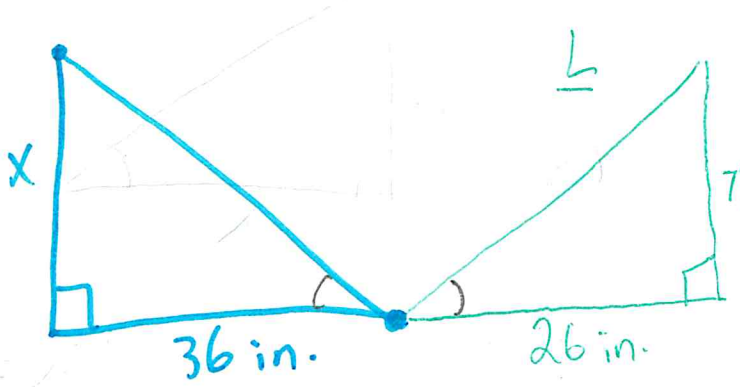
$\frac{36}{17} = \frac{x}{61}$

$17x = 2196$

$\frac{17x}{17} = \frac{2196}{17}$

$x = 129.176$ in.

Sketch #3:



$\frac{36}{26} = \frac{x}{73}$

$\frac{26x}{26} = \frac{2628}{26}$

$x = 101.07$ in.

Angle of Reflection: Corresponding $\angle$'s $\cong$ (that reflect off the mirror).

Objects relationship with the ground:

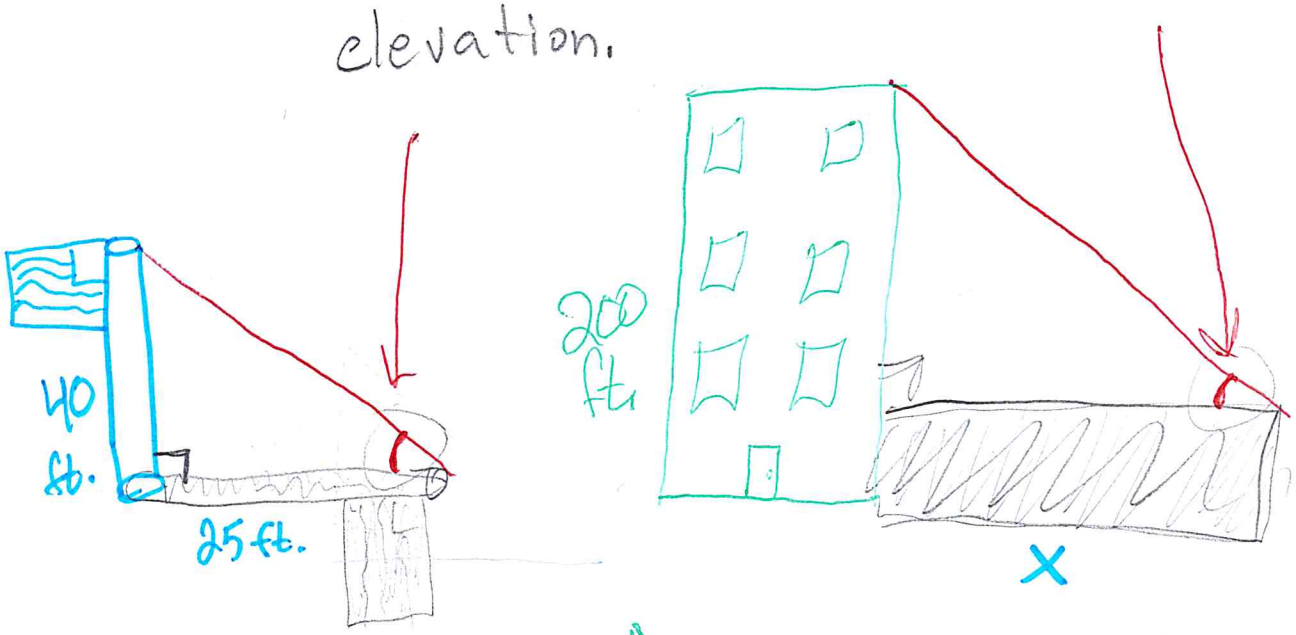
Always perpendicular (90°)

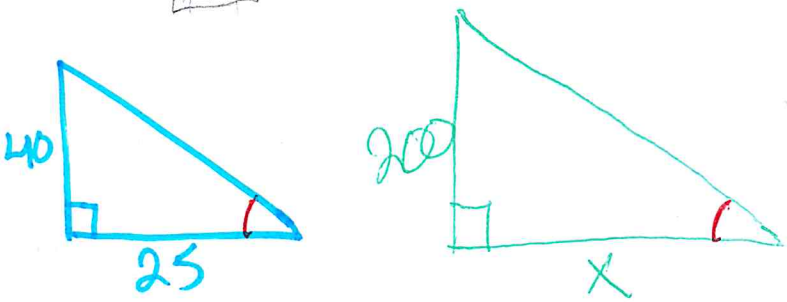
Therefore:

We have 2 similar $\triangle$'s by AA~

A 40-foot tall flagpole cast a 25-foot shadow. Find the length of the shadow cast by a nearby building that is 200 feet tall.

Angle of Elevation: Shadows have congruent ∠'s of elevation.





Similar by AA~

$\frac{40}{200} = \frac{25}{x}$

$\frac{40x}{40} = \frac{5000}{40}$

$x = 125$ ft.