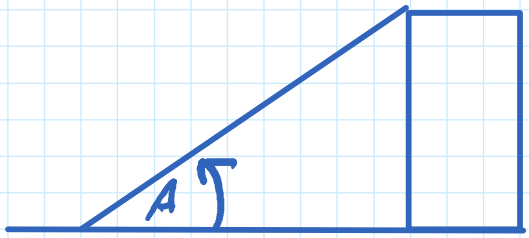
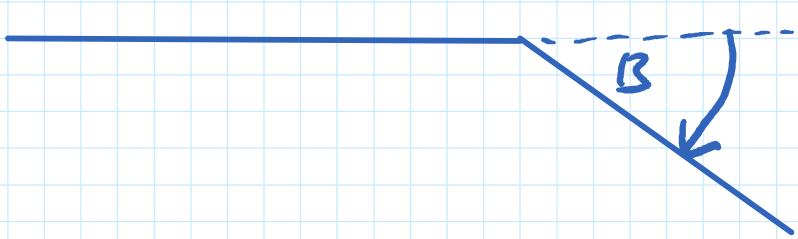


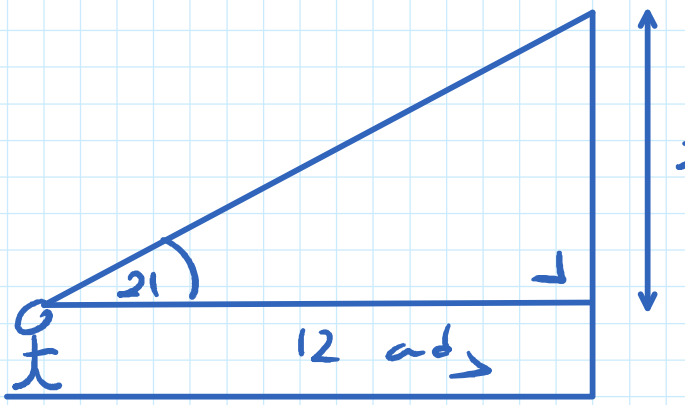
A = angle of elevation.



B = angle of depression.

Measure both above with a clinometer.

Mary is 1.5m tall. She spot a tree which is 12m from her feet. The angle of elevation is 21° from Mary. Calculate the height of the tree to 1 decimal place.

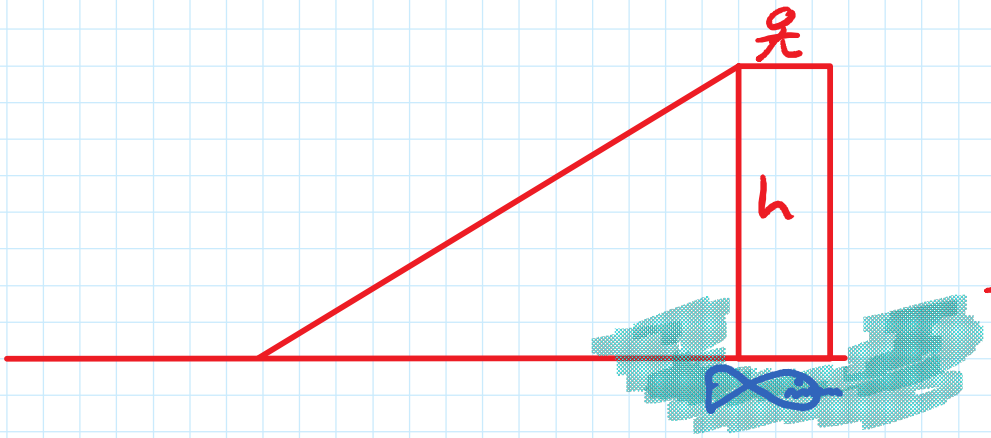


$\tan 21 = \frac{x}{12}$

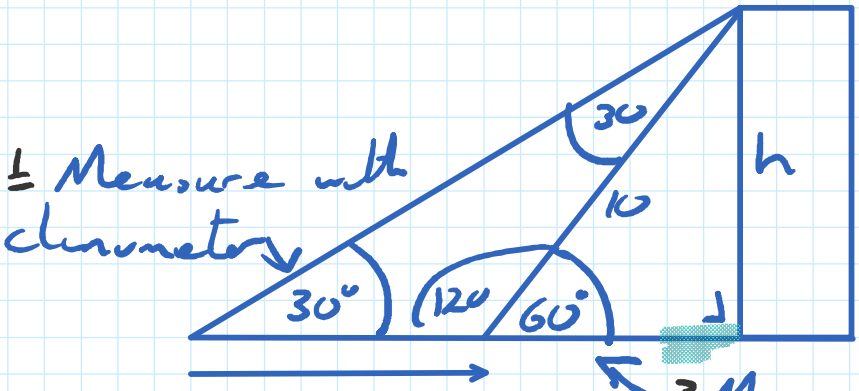
$x = 12 \tan 21$

$x = 4.6$

Tree = 4.6 + 1.5 = 6.1m



Find h the height of the tower. There is water with sid the fish around the tower.



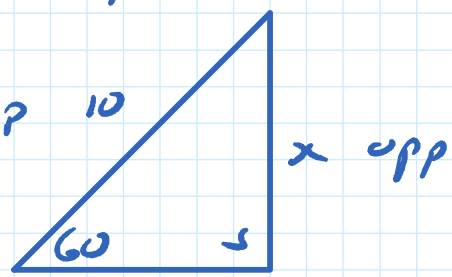
1 Measure with clinometer

2 Measure in 10m

3 Measure new angle of elevation.

4 Find h.

Make up all figures.



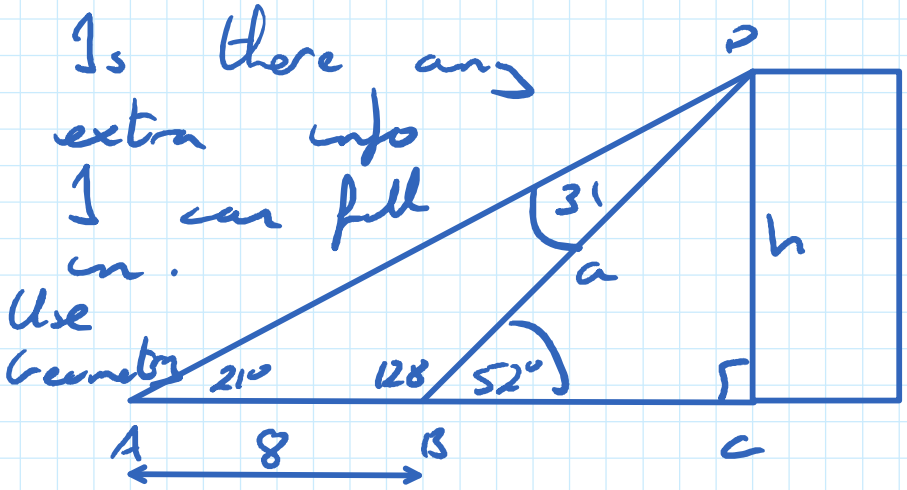
$\sin 60 = \frac{x}{10}$

$10 \sin 60 = x$

$x = 8.66$

$= 8.7$

From point A the angle of elevation to top of a building is 21°. Point B is 8m closer to building than point A. The angle of elevation from B is 52°. How high is the building?



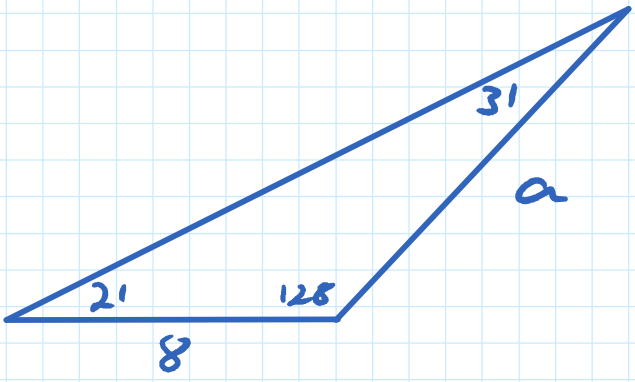
Is there any extra info I can fill in.

Use Geometry

Form a plan.
Find a then h.

Triangle with no length is no good.
ΔBCD no use.
ΔADC no use even though both have h (the unknown.
Find something on one of these Δ.

What can I find?
Need use Δ with a length.
Draw it out.

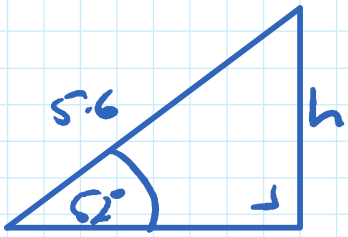


Right angled? No
Have 1 opposite?
Sine Rule

$$\frac{a}{\sin 21} = \frac{8}{\sin 31}$$

$$a = \frac{8 \sin 21}{\sin 31}$$

$$a = 5.6$$



$$\sin 52 = \frac{h}{5.6}$$

$$5.6 \sin 52 = h$$

$$h = 4.38$$

$$h = 4.4 \text{ m}$$