

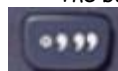
Topic 9: Trigonometry

1) The Basics:

a) Calculator Use:

Notes:

- Make sure your calculator is in 'Degree' mode i.e. there is a 'DEG' or a 'D' on the top of your screen.
- If you know the angle, and you want to find Sin, Cos or Tan of it, you can just type it in straight.
e.g. $\sin 52 = \boxed{\text{SIN}} \boxed{52} \boxed{=} 0.788$
- When looking for an angle, then you need to use the SHIFT or 2ndF button in the top left corner of the calculator.
e.g. $\cos A = 0.4534$
 $\Rightarrow A = \boxed{\text{SHIFT}} \boxed{\text{COS}} \boxed{0.4534} \boxed{=} 63.04^\circ$
- To change between degrees and degrees and minutes as well. The button on the Casio calculator for doing that is:



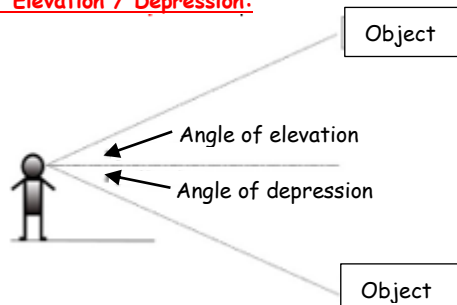
← Press this after getting the answer.

b) Clinometer

- We can measure angles of elevation / depression using a **clinometer**, as shown below:



c) Angles of Elevation / Depression:



2) Right Angled Triangles:

a) Pythagoras' Theorem:

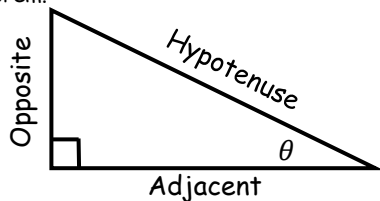
Notes:

- We can use **Pythagoras' Theorem** if we know two sides of a right-angled triangle and we want to find the third side i.e.

$$H^2 = O^2 + A^2$$

← Tables pg 16

- Make sure and label the hypotenuse correctly when using this theorem.

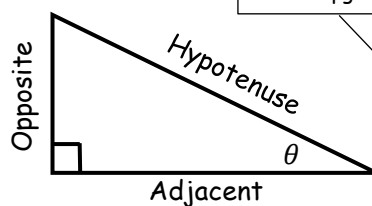


b) Sine, Cosine, Tan Ratios:

Notes:

- 'θ' is a Greek letter called 'theta'. It is often used to represent angles.
- Another way to remember the sin, cos and tan ratios is **Silly Old Harry, Caught A Herring, Trawling Off America** (SOHCAHTOA)

Tables pg 16



$$\sin \theta = \frac{OPP}{HYP}$$

$$\cos \theta = \frac{ADJ}{HYP}$$

$$\tan \theta = \frac{OPP}{ADJ}$$