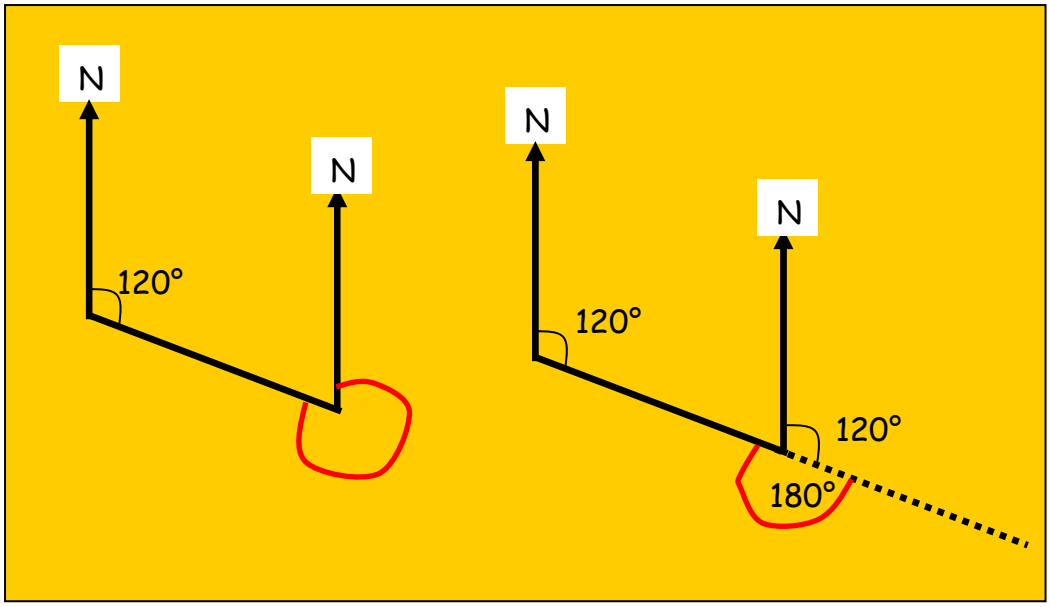
Trigonometry.

You should be able to: Measure the bearing of B **from** A
Use the Sine, Cosine & Tangent Rules for Right angled triangle.

Example 1: Find the bearing of B from A in the following diagram.

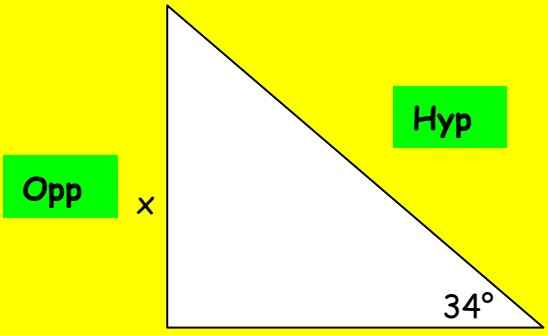


300°

In the diagrams above we are looking for the 3 figure bearing of B **from** the position of A. To do this, we extend our line to make an F angle. And then use our knowledge of Corresponding angles to find the total angle marked with a red line.

Example 2: Find the size of the side marked x.

SOH -CAH-TOA



$$Tanx° = \frac{Opp}{Adj}$$

$$Tan34° = \frac{x}{6}$$

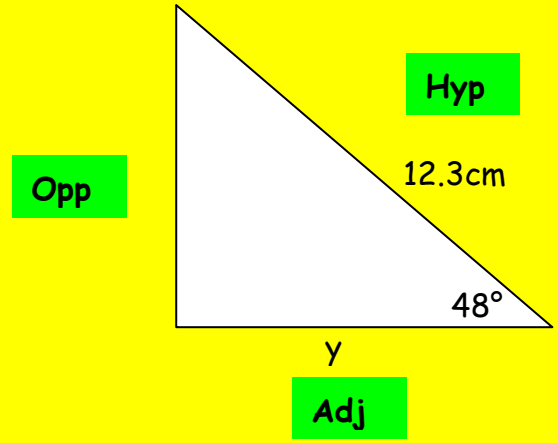
$$x = Tan34° \times 6$$

$$x = 4.05m$$

Remember when working with trigonometry, you must first label your sides. And then use this to decide which of the trig ratios you must use from SOH-CAH-TOA.

Example 3: Find the size of the side marked y.

SOH -CAH-TOA



$$Cosx° = \frac{Adj}{Hyp}$$

$$Cos48° = \frac{y}{12.3}$$

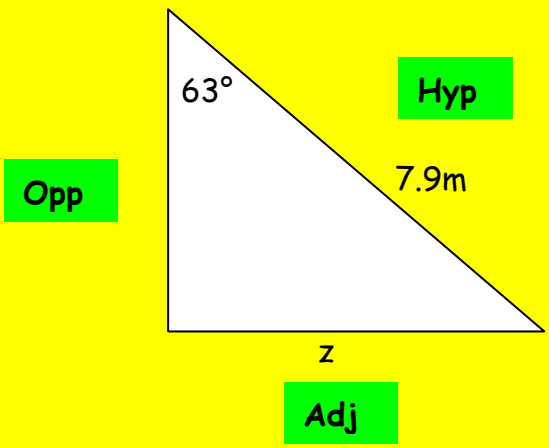
$$x = Cos48° \times 12.3$$

$$x = 8.23cm$$

Don't forget that when finding the size of a side, you must round to 2 decimal places unless told otherwise.

Example 4: Find the size of the side marked z.

SOH -CAH-TOA



$$Sinx° = \frac{Opp}{Hyp}$$

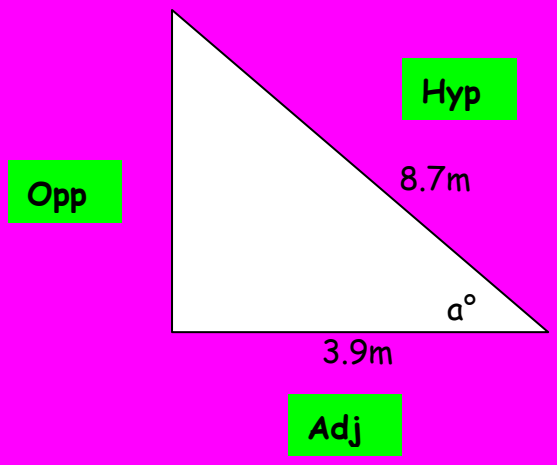
$$Sin63° = \frac{z}{7.9}$$

$$x = Sin63° \times 7.9$$

$$x = 7.04m$$

Example 5: Find the size of the angle marked a°

SOH -CAH-TOA



$$Cosx° = \frac{Adj}{Hyp}$$

$$Cosa° = \frac{3.9}{8.7}$$

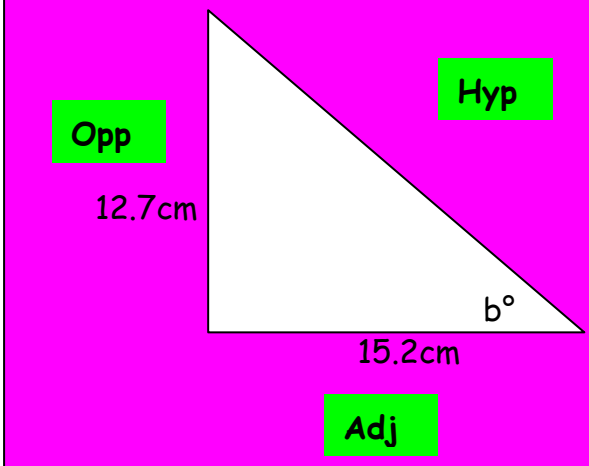
$$Cosa° = 0.448$$

$$a° = 63.4°$$

Remember to press **Shift or 2ndF** on your calculator to find the inverse Cosine to find the angle

Example 6: Find the size of the angle marked b°

SOH -CAH-TOA



$$Tanx° = \frac{Opp}{Adj}$$

$$Tanb° = \frac{12.7}{15.2}$$

$$Tanb° = 0.836$$

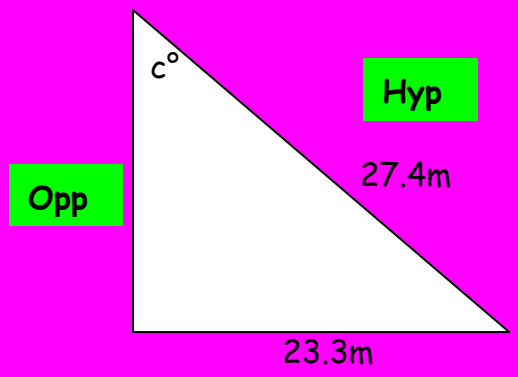
$$b° = 39.9°$$

Remember to always give angle to 1 decimal place unless otherwise stated.

To save the mistake of rounding too early at this stage when you divide the sides before finding the angle, you should round to 3 decimal places. Better still, keep the value on your calculator and find the angle from that.

Example 7: Find the size of the angle marked c°

SOH -CAH-TOA



$$\sin x^\circ = \frac{Opp}{Hyp}$$

$$\sin c^\circ = \frac{23.3}{27.4}$$

$$\sin c^\circ = 0.850$$

$$c^\circ = 58.3^\circ$$