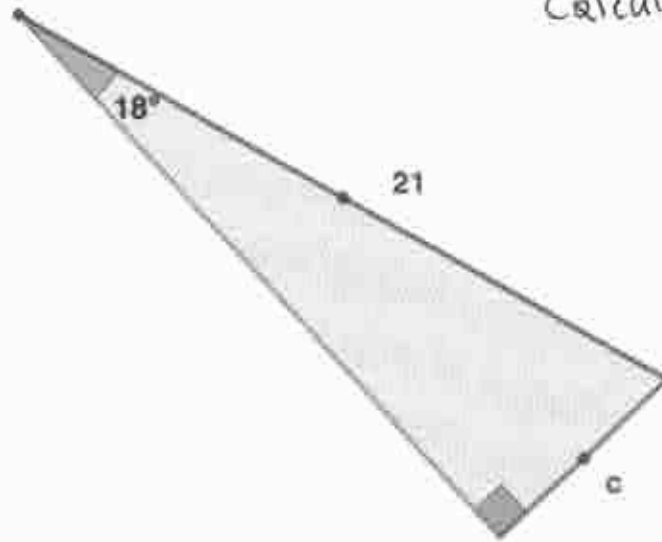


SOH CAH TOA for finding a side on a right angled triangle

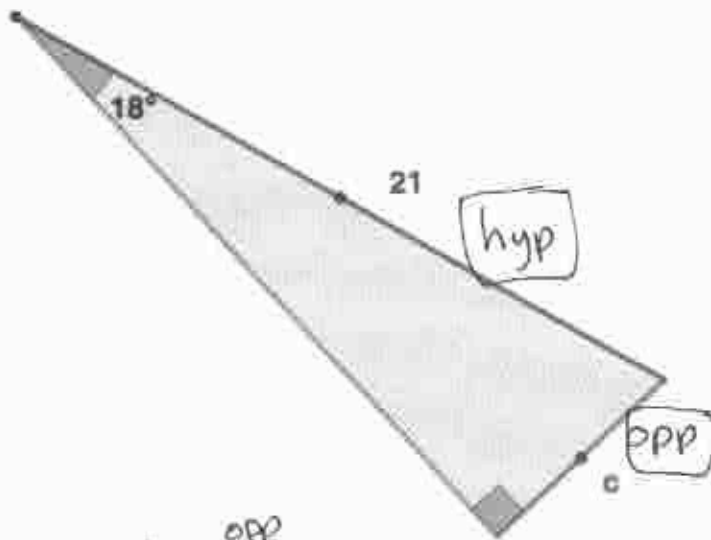
Example 1:

Estimate by sight?
about 7 ish

Calculate 'c'



Draw triangle, label 'opp', 'adj' and 'hyp', select formula, solve.



'c' is opposite 18°
21 is the hypotenuse
This is an OPP, HYP
problem: an OH problem.

SOH CAH or TOA?
Choose SOH for solution.

$$\sin 18^\circ = \frac{\text{opp}}{\text{hyp}}$$

$$\sin 18^\circ = \frac{c}{21}$$

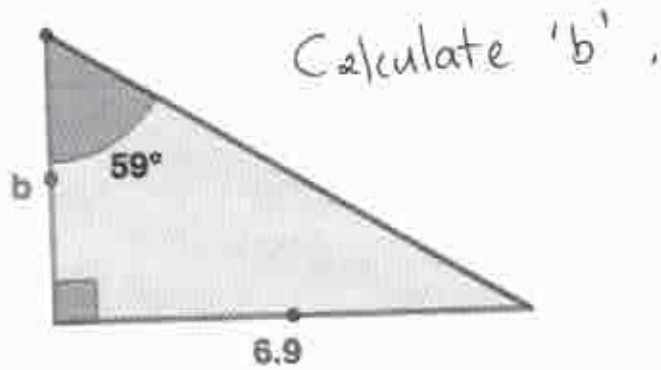
$$21 \cdot \sin 18 = \frac{c}{21} \cdot 21$$

[multiply both sides by 21, the denominator]

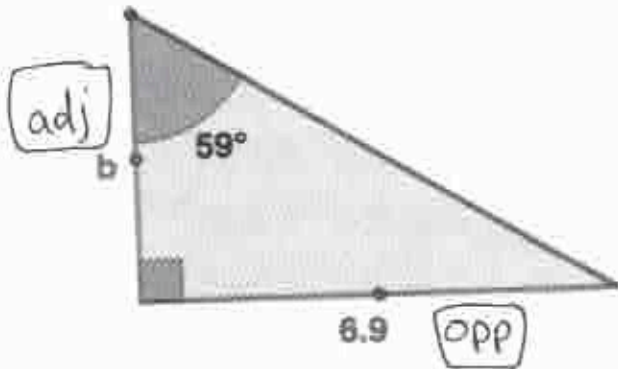
$$\begin{aligned} c &= 21 \cdot \sin 18 \\ &= \underline{\underline{6.49}} \text{ (2 d.p.)} \end{aligned}$$

Example 2:

estimate?
about 4



Draw triangle, label 'opp', 'adj' and 'hyp', select formula, solve.



b is the side adjacent to 59° ;
6.9 is the side opposite 59° ;
this is an OPP, ADJ problem
that is, an OA problem.

SOH CAH or TOA?

Choose TOA for solution.

$$\tan 59^\circ = \frac{6.9}{b}$$

[multiply both sides by b, the denominator]

$$b \cdot \tan 59^\circ = \frac{6.9}{b} \cdot b$$

[simplify]

$$b \cdot \tan 59 = 6.9$$

[divide both sides by $\tan 59^\circ$]

$$\frac{b \cdot \tan 59}{\tan 59} = \frac{6.9}{\tan 59}$$

$$b = \frac{6.9}{\tan 59} = 4.15 \text{ (2 d.p.)}$$