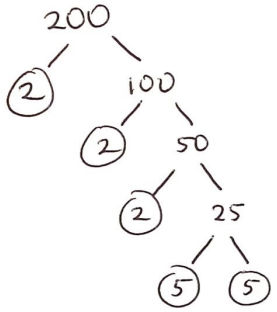
M4 = 38 days to go!

P.O.P.T

3 Write 200 as a product of prime factors, using index notation.



$2 \times 2 \times 2 \times 5 \times 5$

You can use FACT button on the calculator to check

Answer $2^3 \times 5^2$ [3]

15 $a = 3.2$ and $b = 5.8$ are both correct to 1 decimal place.

$3.15 \leqslant a < 3.25$

Find $5.75 \leqslant b < 5.85$

(a) the minimum possible value of $b - a$,

Minimum possible = Minimum b − Maximum a

= 5.75 − 3.25

= 2.50

Answer 2.5 [1]

(b) the maximum possible value of $\frac{b}{a}$

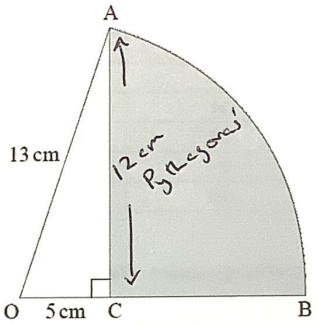
Maximum possible = $\frac{\text{maximum } b}{\text{minimum } a} = \frac{5.85}{3.15}$

Answer 1.857 [2]

18 The diagram shows a sector AOB of a circle, with radius 13 cm and centre O.

The point C lies on OB and angle ACO is 90°

OC = 5 cm.



Area triangle

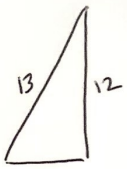
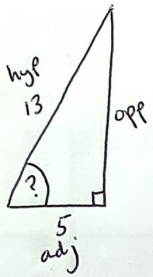


diagram not drawn accurately

$\frac{1}{2} \times 5 \times 12$

30cm^2

Find the area of the shaded section ABC.

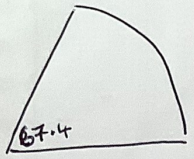


~~S~~ ~~H~~ A C H ~~T~~ ~~A~~

$\cos(?) = \frac{5}{13}$

$? = \cos^{-1}\left(\frac{5}{13}\right)$

$? = 67.4$



Area Sector = $\frac{67.4}{360} \times \pi \times 13^2$

$= 99.4\text{cm}^2$ Shaded = 99.4 − 3(

69.4cm^2

Answer 69.4 cm^2 [8]