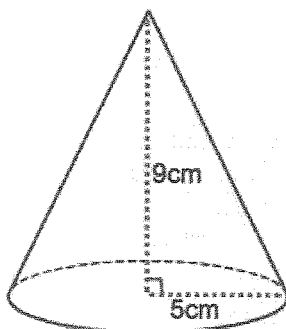


MA = 20 days to go!

1. A cone has base radius 5cm and perpendicular height 9cm.



Work out the volume of the cone.

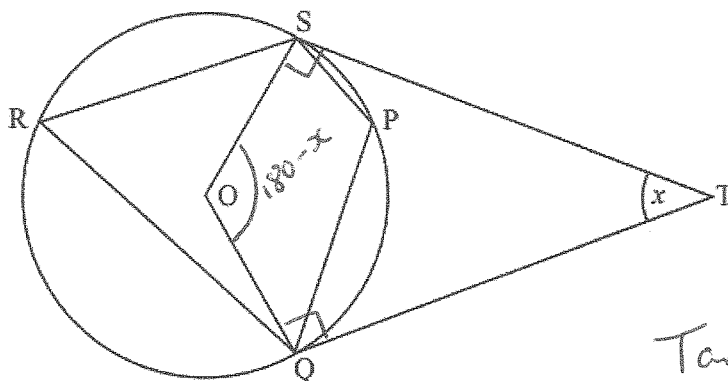
$$V = \frac{1}{3} \pi r^2 h$$

$$\frac{1}{3} \times \pi \times 5^2 \times 9$$

$$75\pi$$

$$\frac{235.6}{236} \text{ cm}^3 \quad (3)$$

- 18 In the diagram, O is the centre of the circle.
P, Q, R and S are points on the circumference of the circle.
ST and QT are tangents to the circle.
Angle STQ = x .



Tangent Kite STQO

Work out the size of angle SPQ in terms of x .

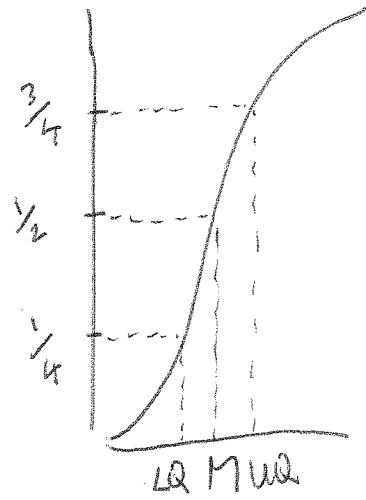
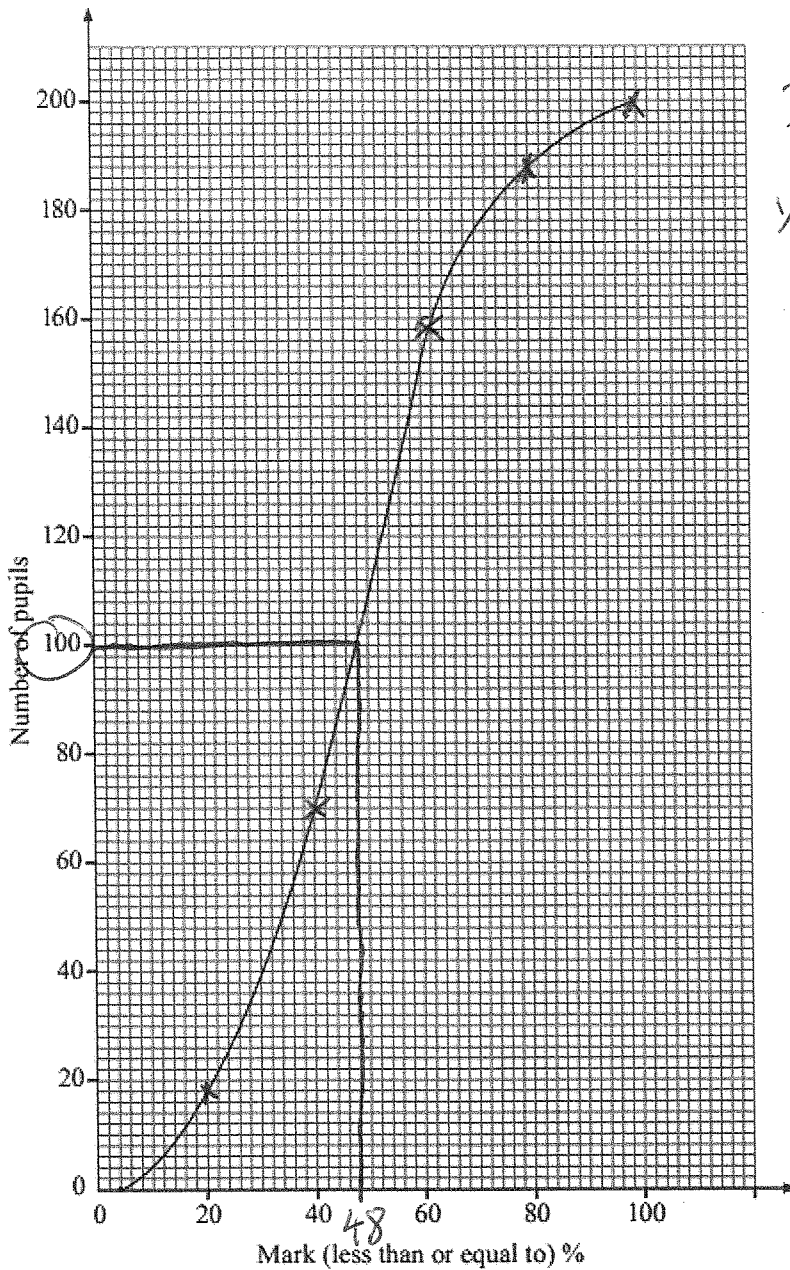
Explain each stage of your working clearly.

$$\hat{SOQ} = 180 - x$$

$$\hat{SRQ} = \frac{180 - x}{2} = 90 - \frac{x}{2} \quad \text{angle at circumference}$$

$$\hat{SPQ} = 180 - \left(90 - \frac{x}{2}\right) = 90 + \frac{x}{2}$$

22 Two hundred pupils sat an English test. The cumulative frequency curve for the percentage marks gained is shown.



You can get a box plot easily from a cumulative frequency curve.

(a) Use the graph to complete table (i) and hence table (ii) below:

(i)

Percentage Mark	Cumulative Frequency
≤ 20	18
≤ 40	70
≤ 60	158
≤ 80	188
≤ 100	200

[1]

(ii)

Percentage Mark	Frequency
$0 < p \leq 20$	18
$20 < p \leq 40$	52
$40 < p \leq 60$	88
$60 < p \leq 80$	30
$80 < p \leq 100$	12

[2]

158 - 70
188 - 158
200 - 188

(b) Use the graph to estimate the median mark.

$\frac{1}{2}$ Way

Answer 48 [1]