

Mock Revision F [44] MARKSCHEME

1.

£112.80

M1,A1,A1

M1 for 17.5% of 96
A1 for f 16.80
A1 answer

[3]

2.

(Graph 1) D

B1

(Graph 2) A

B1

(Graph 3) E

B1

(Graph 4) C

B1

[4]

3.

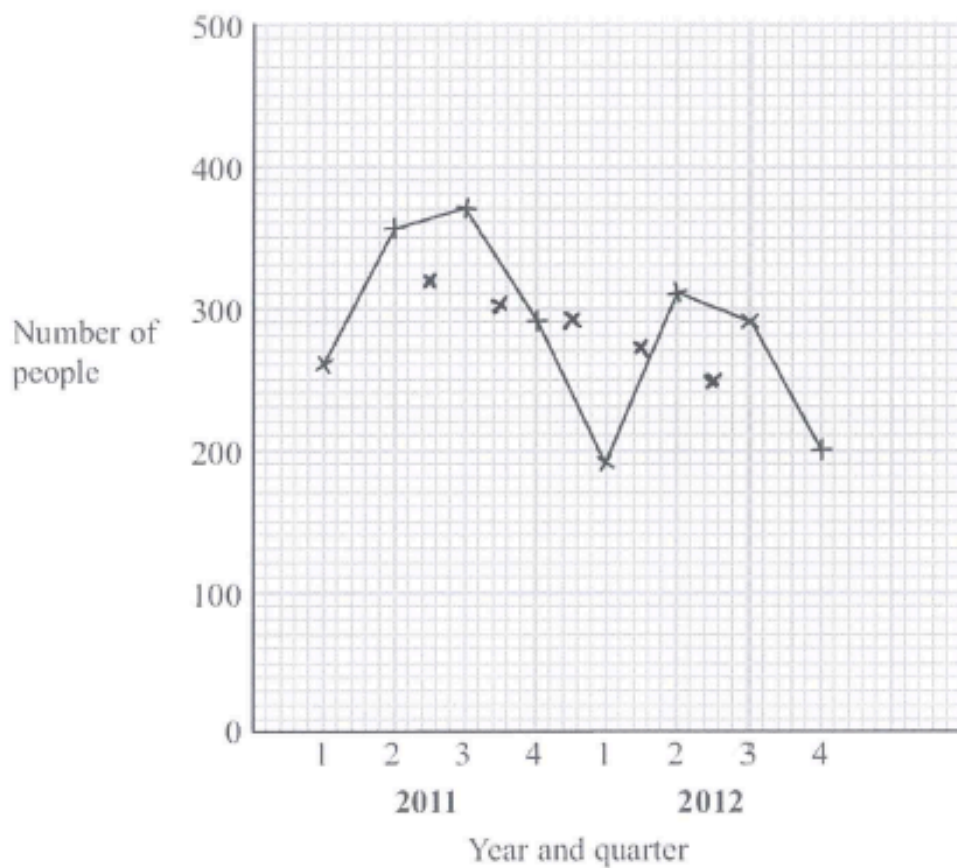
(a) $\frac{290+193+309+292}{4} = 271$

[A1]

249

[A1]

(b)



(2)

(c) It is decreasing

[R1]

4. Angle $ABC = 140^\circ$ and/or Angle $BAD = 50^\circ$ [B1]
 Angle $BAC = \frac{180-140}{2}$ [M1]
 $x = 50 - 20 = 30^\circ$ [A1]

5.

$l = 20x$ $x = 3$	20736	P1 for a method to find the slant height of the cone eg $\sqrt{16x^2 + 12x^2}$ or by similar triangles and Pythagorean triples P1 for setting up an equation for the curved surface area in terms of x eg $2160\pi = \pi \times 12x \times 20x$ P1 for complete method to find the value of x P1 for a method to find the volume A1 cao
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6.

complete chain of reasoning	C1	starts chain of reasoning eg finds area of large square and area of triangle or use of Pythagoras
	C1	for $(x + y)^2 - 4 \times (x \times y \div 2)$ oe or $\sqrt{x^2 + y^2} \times \sqrt{x^2 + y^2}$
	C1	complete chain of reasoning with correct algebra

7.

26.3 to 26.4	6 2 AO1.3a 3 AO3.1b 1 AO3.2	M5 for $\frac{\left[2 \times \frac{1}{2}\right] \times r \times r \times \sin 124}{\pi r^2} [\times 100]$ OR M1 for $180 - 56$ oe AND M2 for $\left[2 \times \frac{1}{2}\right] \times r \times r \times \sin \text{their}'124'$ Or M1 for $\frac{1}{2} \times r \times r \times \sin \text{their}'124'$ AND M1 for <i>their</i> triangle area + πr^2 [$\times 100$]	May see in stages May see evaluated for a particular radius. Award M marks for method seen with $r = \text{their}$ consistent radius
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8.

- (a) 5 B1
 -3 B1
- (b) Points plotted B1ft
 $\pm \frac{1}{2}$ square
 Smooth curve B1 ft
 through their 6 points, $\pm \frac{1}{2}$ square
- (c) (i) Intersection with x -axis B1
 (ii) -0.2 B1 ft
 $\pm \frac{1}{2}$ square

[6]

9.

<p>AM = MD given $\angle BMA = \angle CMD$ vertically opposite $\angle BAM = \angle CDM$ alternate angles</p> <p>Triangles AMB, DMC congruent, ASA</p>	<p>M1 M1 M1</p> <p>A1 4 AO2.4b</p>	<p>After M0, B2 for two pairs of equal angles and one pair of equal sides with insufficient or no reasons Or B1 for two pairs of equal angles identified</p>	<p>Accept any correct proof</p>
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10.

$\frac{10x - x^2}{45}$	<p>P1 for $\frac{x}{10}$ or $\frac{10-x}{10}$ or $\frac{x-1}{9}$ or $\frac{10-x}{9}$ or $\frac{x}{9}$ or $\frac{9-x}{9}$ seen on diagram or in a calculation</p> <p>P1 for $\frac{x}{10} \times \frac{10-x}{9}$ or $\frac{10-x}{10} \times \frac{x}{9}$ for $\frac{x}{10} \times \frac{x-1}{9} + \frac{10-x}{10} \times \frac{9-x}{9}$</p> <p>P1 for $\frac{x}{10} \times \frac{10-x}{9} + \frac{10-x}{10} \times \frac{x}{9}$ for $1 - (\frac{x}{10} \times \frac{x-1}{9} + \frac{10-x}{10} \times \frac{9-x}{9})$</p> <p>P1 for beginning to process the algebra</p> <p>A1 $\frac{10x - x^2}{45}$ oe</p>
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