

Paper 1MA1: 1F				
Question	Working	Answer	Mark	Notes
13		343	P1	for finding area of one face eg $294 \div 6 (= 49)$
<b>Q1</b>			P1	for $\sqrt{49} (=7)$
			P1	for "49" $\times$ "7" <b>or</b> for "7" $\times$ "7" $\times$ "7" oe
			A1	cao

Paper: 1MA1/3F				
Question	Working	Answer	Mark	Notes
12 (a)		Yes (supported)	M1	method to find volume of one cube, eg $2 \times 2 \times 2$ or $2^3 (= 8)$ or draws a solid of 6 cubes
<b>Q2</b>			C1	Yes with supporting evidence eg $2 \times 2 \times 2 = 8, 8 \times 6 = 48$
	(b) (i)	cuboid drawn	B1	either a 1 by 6 by 1 cuboid (2 cm by 12 cm by 2 cm) or a 2 by 3 by 1 cuboid (4 cm by 6 cm by 2 cm) drawn
(ii)		104 or 88	M1 A1	ft for finding areas of 3 or more faces of their cuboid and adding for 104 or 88

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
11	600 cm <sup>3</sup>	M1	for a complete method to find the volume eg $4 \times 10 \times 15$	If extra steps are shown do not award this mark
<b>Q3</b>		A1	for 600	Ignore incorrect or absent units for this mark
		B1	(indep) cm <sup>3</sup>	Ignore incorrect or absent numerical answer for this mark

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
11	160	M1	for $8 \times 5 \times 4$	
<b>Q4</b>		A1	cao	

Paper: 1MA1/3F				
Question	Working	Answer	Mark	Notes
16 (a)		40	P1	for the start of a process to find the number of boxes that will fit along one edge, eg. $240 \div 40 (= 6)$ or $150 \div 30 (= 5)$ or $140 \div 35 (= 4)$ or $240 \div 30 (= 8)$ or $240 \div 35 (= 6.85\dots)$ ie 6 boxes), etc. or for a process to find a volume, eg. $40 \times 30 \times 35 (= 42000)$ or $0.4 \times 0.3 \times 0.35 (= 0.042)$ or $240 \times 150 \times 140 (= 5040000)$ or $2.4 \times 1.5 \times 1.4 (= 5.04)$ NB: condone incorrect or no conversion between m and cm
Q5			P1	for a complete process to find the maximum number of boxes, eg. $“6” \times “5” \times “4” (= 120)$ or $“5040000” \div “42000” (= 120)$ or $“5.04” \div “0.042” (= 120)$
			P1	(dep on P1) for (their number of boxes) $\div 3$ , eg. $120 \div 3 (= 40)$
			A1	cao
(b)		explanation	C1	for explaining that it could take more time or it could take less time <b>with</b> an appropriate reason, eg. “less space means less number of boxes which will take less time” or “it will take more time since a different arrangement would be required”

Paper: 1MA1/2F				
Question	Answer	Mark	Mark scheme	Additional guidance
26	280	P1	for starting to use Pythagoras to find the missing side eg $8.4^2 - 7.2^2 (= 18.72)$	Award P1 for a correct Pythagorean statement eg $x^2 + 7.2^2 = 8.4^2$
Q6		P1	for a complete process to find the missing side eg $\sqrt{70.56 - 51.84}$ <b>or</b> $\sqrt{18.72}$ (=4.32....)	4.3 truncated or rounded can imply P2
		P1	(dep P1) for a process to find the area of the triangular face eg [length of base] $\times 7.2 \div 2$ (=15.57.. <b>OR</b> the volume of the cuboid eg [length of base] $\times 7.2 \times 18$ (=560.7..)	Uses a figure they show as the length of the base of the right angled triangle but dep on P1 Allow 15.57.. truncated or rounded if unsupported
		P1	for a complete process to find the volume of the prism eg "15.5.." $\times 18$ <b>or</b> "560.7.." $\div 2$	
		A1	answer in the range 278 – 281	If an answer is given in the range 278 to 281 but then incorrectly given to 3 sig fig this mark can still be awarded.

Paper: 1MA1/2F					
Question	Answer	Mark	Mark scheme	Additional guidance	
29    <b>Q7</b>	No (supported)	P1	for finding the area of 3 or more faces of the cuboid <b>and</b> adding eg $(6 \times 8) + (8 \times 18) + (6 \times 18) \dots$ or “48” + “144” + “108” ... (= 300)	Could be an addition of <i>any</i> three faces eg $48 + 48 + 144$ etc.  [surface area] must come from the addition of at least three attempts at area, but not from volume.	
		P1	complete process to find surface area of cuboid, eg $6 \times 8 \times 2 + 6 \times 18 \times 2 + 8 \times 18 \times 2$ (= 600)		
		P1	for process to find side length of cube, eg $[\text{surface area}] \div 6$ <b>and</b> square rooting (= 10)		for a process to find the volume of the cuboid $6 \times 8 \times 18$ (= 864) <b>and</b> cube rooting (= 9.52...) to find a side length
		P1	(dep on previous P1) for processes to find volume of cube <b>and</b> volume of cuboid, eg $[\text{side length}]^3$ (= 1000) <b>and</b> $6 \times 8 \times 18$ (= 864)		(dep on previous P1) for process to find surface area of cube, eg. $(“9.52\dots”)^2 \times 6$ (= 544.28...)
		A1	No with 1000 <b>and</b> 864 <b>OR</b> No with 600 <b>and</b> 544(.28...)		

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Question	Answer	Mark	Mark scheme	Additional guidance
23    <b>Q8</b>	8	P1	for working with volume of the cuboid, eg $30 \times 6 \times 19$ (= 3420) <b>OR</b> for using $\frac{2}{3}$ with one dimension, eg. $30 \times 2 \div 3$ (= 20)	For P marks, ignore attempts at unit conversion
		P1	for “3420” $\times 2 \div 3$ (= 2280) or “3420” $\div 3$ (= 1140) <b>OR</b> “20” $\times 6 \times 19$ (= 2280) <b>OR</b> “3420” $\div 275$ (= 12.4..... = 12 cups)	
		P1	(dep on P2) for “2280” $\div 275$ (= 8.29..) <b>or</b> “1140” $\div 275$ (= 4.14..) <b>OR</b> “12” $\times 2 \div 3$ <b>OR</b> for $275 \times 8$ (= 2200) <b>or</b> $275 \times 9$ (= 2475)	
		A1	cao	

Paper: 1MA1/3F				
Question	Answer	Mark	Mark scheme	Additional guidance
29	No Supported	P1	for finding the area of a circle eg $\pi \times 0.8^2$ (= 2.01...)	Must be area of circle and not part of a volume, eg $\pi r^2 h$ May be seen as $2\pi r^2$
		P1	for finding the curved surface area eg $2\pi \times 0.8 \times 1.8$ (= 9.047...)	May be seen from $2\pi r h$ or from $\pi d h$
		P1	for use of the coverage information with an area eg “2.01...” $\div 5$ (= 0.402...) or “4.02...” $\div 5$ (= 0.804...) or “9.047...” $\div 5$ (= 1.8095...) or “11.058” $\div 5$ (= 2.2116..) or “13.069...” $\div 5$ (= 2.6138...) <b>OR</b> for process to find total coverage for comparison eg $5 \times 7$ (= 35)	Accept numbers without working written to no less than 2dp Do not award if a volume has been used as part of the calculation.  An independent mark for $5 \times 7$
		P1	(dep P1) for finding total surface area for 3 tanks eg [total surface area] $\times 3$ (= 39.2...) <b>OR</b> for complete process to find the number of tins needed for total area of 3 tanks eg “13.069”... $\times 3 \div 5$ (= 7.84....) <b>OR</b> for complete process to find coverage needed from each tin eg “13.069”... $\times 3 \div 7$ (= 5.6...)	[total surface area] must come from the addition of two attempts at area, but not from volume.
<b>Q9</b>		C1	for conclusion “No” supported by accurate figures eg 8 tins <b>or</b> 7.84 ( $> 7$ ) <b>or</b> 39.2 $> 35$ <b>or</b> 5.6 ( $> 5$ )	Clear statement that there is <b>not</b> enough paint supported by correct figures for comparison. NB: $2.6 \times 3 = 9$ tins needed is inaccurate 8 or 7.84 tins is sufficient without restating the 7, 5.6 m <sup>2</sup> is sufficient without restating the 5 but 39.2 and 35 are needed for comparison. A statement of “No, 8 tins” alone gets 0 marks without supporting working.

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
27	450	M1	for $18 \div 3 (=6)$	Ignore units
Q10		M1	for substitution eg. $75 = \frac{F}{"6"}$ or $75 \times "6"$	
		A1	cao	

Paper: 1MA1/1F				
Question	Answer	Mark	Mark scheme	Additional guidance
25	12	P1	for a process to find the area of cross section, eg $750 \div 25 (= 30)$ oe <b>or</b> $\frac{1}{2} \times 5 \times h$ oe	May use any letter for $h$ or may use ?
Q11		P1	for a correct equation in $h$ , eg $750 \div 25 = \frac{1}{2} \times 5 \times h$ oe <b>or</b> $\frac{1}{2} \times 5 \times h \times 25 = 750$ oe	
		A1	<b>or</b> for a complete process to find $h$ , eg. $\frac{750}{25} \times \frac{2}{5}$ oe <b>or</b> $"30" \times 2 \div 5$ cao  SC B1 for answer of 6 if P0 scored	

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Question	Answer	Mark	Mark scheme	Additional guidance
26  <b>Q12</b>	Shown	M1	for a correct expression for the area of one face of the cube, eg. $x^2$ <b>or</b> a correct expression for the surface area of the cube, eg $6 \times x^2$	No marks for $x = \sqrt{6\pi}$ without any working.  $6 \times x^2 = 4 \times \pi \times 3^2$ $x^2 = 36\pi \div 6$ $x = \sqrt{6\pi}$
		M1	for a correct expression for the surface area of the sphere, eg $4 \times \pi \times 3^2 (= 36\pi)$	
		M1	for forming a suitable equation, eg $6 \times x^2 = 4 \times \pi \times 3^2$ <b>or</b> $6x^2 = "36\pi"$	
		A1	for completing the method to $x = \sqrt{6\pi}$ or $k = 6$	

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24  <b>Q13</b>	Yes (supported)	P1	for a process to find the volume of 1 tank eg $\pi \times 40^2 \times 160 (= 804247.7... \text{ or } 804.2... \text{ or } 256000\pi)$	Could be truncated or rounded  For this mark [volume of tank] must come from a calculation involving $\pi$ , $r^2$ , $h$  For this mark [volume of tank] must come from a calculation involving $\pi$ , $r^2$ , $h$ <b>or</b> be stated as their volume  There are other possible pairs of values which can be used in the comparison
		P1	for complete process to find the volume of 4 tanks, [volume of tank] $\times 4$ eg $\pi \times 40^2 \times 160 \times 4 (= 3216990.8... \text{ or } 3216.9... \text{ or } 1024000\pi)$ <b>or</b> for process to find volume of fertiliser available per tank eg $32 \times 1000 \div 4 (= 8000)$	
		P1	for a process to find the amount of mixture for 1 tank eg [volume of tank] $\div 101 (= 7962.8...)$ or 4 tanks $(= 31851.3...)$ <b>OR</b> for a process to find volume of mixture that 32 litres of fertiliser will make eg $32000 \times 101 (= 3232000)$ or $32 \times 101 (= 3232)$	
		C1	for Yes supported by correct figures shown eg a comparable figure in the range 31.8 to 31.9 (litres) <b>or</b> in the range 31800 to 31900 with 32000 (cm <sup>3</sup> ) <b>or</b> in the range 3216 to 3217 with 3232 (litres) <b>or</b> in the range 3216000 to 3217000 with 3232000 (cm <sup>3</sup> ) <b>or</b> in the range 7958 to 7963 with 8000 (cm <sup>3</sup> )	