

<b>Paper 1MA1: 2F</b>				
<b>Question</b>	<b>Working</b>	<b>Answer</b>	<b>Notes</b>	
1		6.66	B1 cao	
2		0.4375	B1 cao	
3		27 or 64	B1 cao	
4		7.3225	M1 for 5.5225 or 1.8 A1 cao	
5		$\frac{2}{3}$	B1 oe	
6		eg 1, 2, 18	P1 P1 A1	Starts process eg. Lists at least 2 multiples from 9, 18, 27, 36, 45 or lists at least 2 factors from 1, 2, 4, 5, 8, 10, 20, 40 Continues process eg. gives a set of numbers whose sum is greater than 20 but less than 30 but numbers may not all be appropriate factors/multiples Gives 3 numbers that meet all the criteria

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7		$\frac{53}{64}$	P1 for interpreting information e.g. recognising that the shaded area = $3 \left( \frac{1}{4} \times \frac{1}{4} \right) + \left( \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \right)$ or adding in lines to diagram to show 64ths A1 cao
8			C1 Any one correct statement eg. No key, y axis label, 4 missing on y axis C1 Any 2 <sup>nd</sup> correct statement C1 Any 3 <sup>rd</sup> correct statement
9		13	M1 Puts numbers in order or clear attempt to find 5 <sup>th</sup> number <b>or</b> (9 + 1)/2 <b>or</b> selects 11 A1
10 (a)		$p + c$	B1
(b)		$\frac{14}{3}$	M1 adds 5 to both sides of equation A1 oe
11 (a)		eg. $2 \times 5 = 10$	B1 example given
(b)		explanation	P1 two prime numbers identified C1 conclusion which also shows at least one calculation with prime numbers or identifies one of the prime numbers as 2.

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12 (a)		graph	C1 introduce a scale for the y axis C1 plots at least 2 points correctly C1 fully correct and complete graph
(b)		15 miles (supported)	M1 reads off graph eg 20 km = 12-13 miles or 15 miles = 24 km or uses table C1 states 15 miles (24 km) with appropriate evidence
13		shown	B1 $ABC = 80$ M1 $180 - 80^\circ - 50^\circ$ A1 $ACB = 50$ C1 statement that since $ACB = CAB = 50^\circ$ with reasons eg <u>Vertically opposite angles are equal</u> , <u>Angles in a triangle add up to <math>180^\circ</math></u> , <u>The exterior angle of a triangle is equal to the sum of the interior opposite angles</u> ; <u>Base angles of an isosceles triangle are equal</u> .
14		13.9	P1 finds the volume of a cuboid eg $50 \times 40 \times 60 (=120000)$ P1 finds 35% of the oil from the cuboid eg $120000 \times 0.35$ oe $(=42000)$ P1 removes 35% of oil from cuboid eg $120000 - 42000 (=78000)$ P1 division to find missing side length eg $78000 \div (80 \times 70)$ or $13.928\dots$ A1 for answer to an appropriate degree of accuracy eg (13.9 or 14 or 10)

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15		22.5	M1 interpret information eg use the scale A1
16		12	M1 Starts to list factors of writes at least one number in terms of prime factors <b>or</b> identifies a common factor other than 1 A1 cao
17	<p>£ per kg:  <math>1.89 \div 2 = 0.945</math> (94.5);  <math>4.30 \div 5 = 0.86</math> (86);  <math>8.46 \div 9 = 0.94</math> (94)</p> <p>kg per £:  <math>2 \div 1.89 = 1.058(2..)</math> ;  <math>5 \div 4.30 = 1.162(79...)</math> ;  <math>9 \div 8.46 = 1.0638(297...)</math></p> <p>Price per 90 kg:  <math>1.89 \times 45 = 85.05</math>;  <math>4.30 \times 18 = 77.4(0)</math>;  <math>8.46 \times 10 = 84.6(0)</math></p>	5 kg (supported)	P1 for a process (for at least two boxes) of division of price by quantity or division of quantity by price or a complete method to find price of same quantity or to find quantity of same price P1 for a complete process to give values that can be used for comparison of all 3 boxes C1 for 5 kg and correct values that can be used for comparison for all 3 boxes and a comparison of their values
18		11	M1 process of substitution demonstrated eg $5 \times 3 + 2 \times -2$ A1 cao

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19			720	<p>P1 attempt to find the maximum biscuits for one of the ingredients e.g. <math>5000 \div 15 (=33.3..)</math> or <math>2500 \div 75 (=33.3..)</math> or <math>3000 \div 100 (=30)</math> or <math>320 \div 10 (=32)</math></p> <p>P1 for identifying butter as the limiting factor or <math>30 \times 24 (=720)</math> seen</p> <p>A1</p>
20	(a)		$3(f + 3)$	B1 cao
	(b)		$(x - 5)(x + 3)$	M1 for $(x \pm 5)(x \pm 3)$
				A1 cao
21			$p=qr-sr$	M1 for multiplying all 3 terms by $r$ or isolating $p/r$ term
				A1 oe
22	(a)		90	<p>P1 for the process of finding an area eg <math>6 \times 11 (=66)</math></p> <p>P1 (dep on area calculation) for the process of working out the number of tins eg "<math>66</math>" <math>\div 12 (=5.5</math> or <math>6</math> tins)</p> <p>P1 for the process of working out the cost eg "<math>6</math>" tins <math>\times</math> <math>\pounds 15</math></p>
	(b)		reason	A1 cao
				C1 she might need to buy more tins

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23		96	<p>P1 a strategy to start to solve the problem eg <math>18 \div (7 - 4) (=6)</math></p> <p>P1 for completing the process of solution eg “6” <math>\times (4 + 5 + 7)</math></p> <p>A1 cao</p>
24		20.9	<p>M1 correct recall of appropriate formula eg <math>\sin x = \frac{5}{14}</math></p> <p>A1 for 20.9(248...)</p>
25 (a)		$4n+2$	<p>M1 start to deduce nth term from information given eg <math>4n+k</math> where <math>k \neq 2</math></p> <p>A1 cao</p>
(b)		No (supported)	<p>M1 start to method that could lead to a deduction eg uses inverse operations</p> <p>C1 for a convincing argument eg 34 is 107 so NO; <math>(108-5) \div 3</math> is not an integer</p>
26		<p>conclusion</p> <p>(supported)</p>	<p>P1 <math>30 \div 70 (=0.428)</math>      <math>26 \div 60 (=0.4333...)</math>      <math>30 \div 26 (=1.153...)</math></p> <p>P1 <math>60 \times "0.428..."</math>      <math>70 \times "0.4333..."</math>      <math>60 \times "1.153..."</math></p> <p>C1 for conclusion linked to 25.7 mins, 30.3 miles or 69.2 mph</p>

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27		$22 \leq f < 24$	
(a)		21.9	B1
(b)			M1 $x \times f$ using midpoints M1 (dep on previous mark) " $x \times f$ " $\div 40$ A1 accept 22 if working seen
28		9.54	P1 $10^2 - 5^2 (=75)$ P1 "75" + $4^2 (=91)$ P1 $\sqrt{(10^2 - 5^2 + 4^2)}$ A1 $9.53 - 9.54$
29		0.06	M1 for 0.2 and 0.3 A1 cao