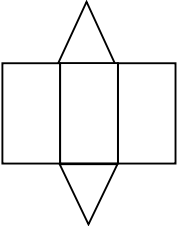


1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0

Question		Working	Answer	Mark	Notes
1.	(i)		11	1	B1
	(ii)		12	1	B1
	(iii)		4	1	B1
	(iv)		10	1	B1
2.	(a)		£4.20	2	M1 $2 \times 150 + 120$ oe A1 (accept 4.2)
	(b)		5	3	M1 $950 - 50$ oe M1 “900” $\div 180$ A1 cao
3.	(a)		400	1	B1 for 400 or 4 hundred
	(b)	$5467 + 3543 - 6799$ oe	2211		M1 A1

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Question	Working	Answer	Mark	Notes
4.		41	2	M1 for $4n + 1$ seen or $4 \times 10 + 1$ or attempt to count on from 21 in 4s at least 3 times A1 cao
5.	(i)	Pentagon	2	B1
	(ii)	Decagon		B1
6.		$\frac{3}{8}$	1	B1 for $\frac{3}{8}$ oe
7.		$140 \div 1000 = 0.14$ (litres) OR $1.2 \times 1000 = 1200$ (ml)	2	M1 for $140 \div 1000$ C1 for no (oe) and 0.14 seen OR M1 for 1.2×1000 C1 for no (oe) and 1200 seen OR M1 $1l = 1000ml$ C1 for no with correct explanation

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Question	Working	Answer	Mark	Notes
8.	$8 \div 20 \times 100$	40	2	M1 for $8 \div 20 \times 100$ or $\frac{8}{20} = \frac{8 \times 5}{20 \times 5}$ oe or $\frac{40}{100}$ A1 cao
9.			3	B3 for a fully correct net [B2 for 3 rectangles and 2 triangles (not to correct scale)] [B1 for any rectangle or triangle drawn accurately to the correct scale]
10.	(a) $840 : 40$ oe or $840 \div 40$ oe or $1 : 21$	21	2	M1 A1 (Accept $21 : 1$)
	(b) $(105 \div 3) \times 2$	70	2	M1 M1 for $105 \div 3 (= 35)$ A1
	(c) $(105 \div (4 + 3)) \times 3$	45	2	M1 M1 for $105 \div (4 + 3) (= 15)$ A1

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Question	Working	Answer	Mark	Notes
11.		2 minutes 29 seconds	3	M1 for correct method for adding the four times M1 for 20 minutes (or 1200 seconds) – “total time” A1 cao OR M1 for correct method for subtracting one time from 20 minutes (or 1200 seconds) M1 for subtracting each “time” A1 cao
12.	5772 – 4200 or 1572 “1572” ÷ 0.16	9825	3	M1 M1 dep A1 cao
13.	$2 \times 1.8 = 3.6$	no (with supporting work)	3	M2 for height of lorry 3 – 4 (metres) oe (M1 for man’s height seen as 1.5–2 (metres) oe or for $2 \times$ man’s height) C1 (dep on M1) for no with supporting work

1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0				
Question	Working	Answer	Mark	Notes
14.		131.89	5	<p>B2 for $PR = 21$ m (± 0.6 m)</p> <p>or at least 3 bushes 0.5 to 0.9 cm apart on PR</p> <p>(B1 for $PR = 7$cm (± 0.2 cm) or at least 3 bushes 1.8 to 2.2 cm apart on PR)</p> <p>M1 “21” $\div 2$ or for indication of 10 or 11 bushes (may be on diagram)</p> <p>M1 (dep on 2 marks earned previously) for ‘11’ $\times 11.99$</p> <p>A1 cao</p>
15.	(a)	e.g. there are no numbers which are in both A and B .	1	B1 for a statement which indicates correct meanings of intersection and empty set
	(b)	e.g. A is odd, B is even	1	B1
	(c)	9	1	
		3, 7, 8, 9	2	B2 (Award B1 for any three correct with no extras or all four correct with only one extra. Allow in any order, with or without brackets, ignore repeats)

1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0

Question		Working	Answer	Mark	Notes
16.	(a)		$x = 3$ drawn	1	B1 for $x = 3$ drawn [Note: each line drawn must be a single line segment satisfying $x = 3$]
	(b)		$y = x$ drawn	1	B1 for $y = x$ drawn [Note: each line drawn must be a single line segment satisfying $y = x$]
	(c)		Gradient = $\frac{3-0}{0--2}$	1.5	2
17.	(a)		Point at (76, 92)	1	B1 point plotted ± 0.5 small square
	(b)		Relationship described	1	B1 for a description of dynamic relationship, e.g the greater the score in test A the greater the score in test B or positive correlation (B0 If contradiction is made)
	(c)		Line of best fit	2	M1 for an appropriate line of best fit or a vertical line drawn at 65 or a point plotted at (65, answer) A1 for an answer in the range 60–70 inclusive

1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0

Question		Working	Answer	Mark	Notes
18.	(a)		0.4	2	M1 for $1 - (0.2 + 0.3 + 0.1)$ oe A1 for 0.4 oe
	(b)		24	2	M1 for 120×0.2 oe or $\frac{24}{120}$ A1 for 24
	(c)		$\frac{13}{70}$	2	M1 for $200 \times 0.4 + 500 \times 0.1$ oe A1 for $\frac{130}{700}$ oe or a decimal answer in the range 0.185 to 0.186 or 0.19

1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0

Question	Working	Answer	Mark	Notes	
19.	(a)	$15 \div 60$	25p	2	M1 for $15 \div 60$ oe or clear attempt to find gradient A1 for £0.25 or 25p
	(b)	$0.2 \times 90 (=18)$ From graph 90 units costs £19	Yes as cost will be lower	3	M1 for Tariff B price for 90 units $20 \times 90 (=1800)$ or $0.2 \times 90 (= 18)$ OR Tariff A price per unit $\frac{1900}{90}$ or $\frac{19}{90}$ B1 for reading from Tariff A graph at 90 units or £19 C1 for £18 and £19 with 'yes' or 21.(1...)p with 'yes' OR M1 for drawing the correct line (for Tariff B) through the origin with gradient 0.2 B1 for reading from Tariff A graph at 90 units or 19 seen C1 for £18 and £19 with 'yes'

1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0

Question	Working	Answer	Mark	Notes																																
20.	$180 \times 365 = 65700$ $65700 \div 1000 = 65.7$ $65.7 \times 91.22 = 5993.154$ $5993.154 \div 100 + 28.20$ $= 88.13..$	Decision (Should have a water meter installed)	5	<p>Per year</p> <p>M1 for $180 \times '365'$ (= 65700)</p> <p>M1 for “65700”\div1000 (= 65.7 or 65 or 66)</p> <p>M1 for “65.7” \times 91.22 (=5 993.....)</p> <p>A1 for answer in range (£)87 – (£)89</p> <p>C1(dep on at least M1) for conclusion following from working seen</p> <p>OR (per day)</p> <p>M1 for $107 \div '365'$ (= 0.293...)</p> <p>M1 for $180 \div 1000 \times 91.22$ (= 16.4196)</p> <p>M1 for $28.2 \div '365' + '0.164196'$ (units must be consistent)</p> <p>A1 for 29 – 30(p) and 24– 24.3(p) oe</p> <p>C1(dep on at least M1) for conclusion following from working seen</p>																																
	<table border="1"> <thead> <tr> <th>D</th> <th>U</th> <th>C</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>366</td> <td>65880</td> <td>6010</td> <td>88.30</td> </tr> <tr> <td>365</td> <td>65700</td> <td>5993</td> <td>88.13</td> </tr> <tr> <td></td> <td>65000</td> <td>5929</td> <td>87.49</td> </tr> <tr> <td></td> <td>66000</td> <td>6020</td> <td>88.40</td> </tr> <tr> <td>364</td> <td>65520</td> <td>5976</td> <td>87.96</td> </tr> <tr> <td>360</td> <td>64800</td> <td>5911</td> <td>87.31</td> </tr> <tr> <td>336</td> <td>60480</td> <td>5517</td> <td>83.37</td> </tr> </tbody> </table>	D	U	C	T	366	65880	6010	88.30	365	65700	5993	88.13		65000	5929	87.49		66000	6020	88.40	364	65520	5976	87.96	360	64800	5911	87.31	336	60480	5517	83.37			
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1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0

Question	Working	Answer	Mark	Notes
21.	Some area examples: $\frac{1}{2} \times 12 \times 25 = 150$ $8 \times 25 = 200$ $\frac{1}{2} \times 11 \times 25 = 137.5$ $5 \times 25 = 125$ $\frac{1}{2} \times 21 \times 25 = 262.5$ $\frac{1}{2} \times 44 \times 25 = 550$ $\frac{1}{2} \times 70 \times 25 = 875$ $40 \times 25 = 1000$	550 ft ²	4	M1 Using the correct dimensions to calculate an area M1 Complete method to find the area of the grass A1 cao C1 (dep on a previous M mark) correct units communicated
22.	(a)	$\frac{3}{7}, \frac{4}{7}, \frac{3}{7}, \frac{4}{7}, \frac{3}{7}$	2	B2 Fully correct tree (B1 $\frac{3}{7}$ on first branch)
	(b)	$\frac{3}{7} \times \frac{3}{7}$	2	M1 ft for ' $\frac{3}{7}$ ', ×, ' $\frac{3}{7}$ ', provided $0 < \frac{3}{7} < 1$ A1 ft for $\frac{9}{49}$ oe

National performance data from Results Plus

Original source of questions					Topic	Max score	Mean score of students achieving grade:					
Qn	Spec	Paper	Session	Qn			ALL	C	D	E	F	G
1	4MA0	2F	1401	Q01	Primes; factors; multiples	4	3.79	3.93	3.85	3.71	3.37	2.46
2	5AM2	2F	1311	Q14	Substitution into expressions	5	4.15	4.74	4.39	4.30	2.94	1.92
3	4MA0	2F	1506	Q02	Integers	3	2.35	2.77	2.57	2.38	1.78	1.21
4	1380	2H	1203	Q01	Number sequences	2	1.79	1.78	1.70	1.64		
5	5MM2	2F	1311	Q02	Properties of 2D shapes	2	1.34	1.73	1.62	1.34	0.96	0.85
6	NEW				Ratio	1						
7	5MB3	3F	1303	Q10	Conversions	2	0.59	1.08	0.59	0.40	0.16	0.05
8	1380	2H	1011	Q07	Percentages	2	1.61	1.57	1.08	0.59		
9	5AM2	2F	1206	Q16	Nets	3	1.64	2.31	1.79	1.15	0.70	0.31
10	4MA0	2H	1401	Q01	Ratio	6	5.15	4.57	3.18	2.12		
11	5AM2	2F	1506	Q14	Time calculations	3	1.65	2.26	1.81	1.49	1.05	0.50
12	4MA0	1F	1401	Q10	Money calculations	3	1.16	1.71	1.08	0.57	0.27	0.67
13	5AM1	1F	1206	Q20	Estimation	3	1.17	1.70	1.24	0.76	0.35	0.05
14	5AM2	2F	1211	Q21	Scale diagrams	5	2.28	3.71	2.61	1.70	0.61	0.42
15	4MA0(R)	1F	1405	Q18	Sets	4	2.15	2.89	1.92	1.25	0.85	0.86
16	1MA0	2F	1303	Q22	Graphs of linear equations	4	0.62	1.18	0.61	0.34	0.19	0.13
17	5AM1	1H	1206	Q02	Scatter diagrams	4	2.97	2.49	1.74	0.43		
18	5AM2	2F	1506	Q23	Probability	6	2.94	4.12	3.30	2.46	1.61	1.42
19	5AM1	1H	1306	Q09	Conversion graphs	5	3.43	2.75	1.79	0.38		
20	1MA0	2F	1206	Q28	Compound measures	5	1.03	2.54	1.20	0.46	0.11	0.03
21	5AM1	1H	1206	Q07	Area	4	2.07	1.12	0.58	0.00		
22	5MB1	1H	1111	Q13	Tree diagram	4	2.95					
						80						