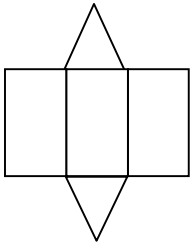
1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
1.	(i)		11	1	B1
	(ii)		12	1	B1
	(iii)		4	1	B1
	(iv)		10	1	B1
2.	(a)		£4.20	2	M1 2 × 150 + 120 oe A1 (accept 4.2)
	(b)		5	3	M1 950 – 50 oe M1 "900" ÷ 180 A1 cao
3.	(a)		400	1	B1 for 400 or 4 hundred
	(b)	5467 + 3543 – 6799 oe	2211		M1 A1

1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0					
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) (ii)		Pentagon Decagon	2	B1 B1
6.			$\frac{3}{8}$	1	B1 for $\frac{3}{8}$ oe
7.		140 ÷ 1000 = 0.14 (litres) **OR** 1.2 × 1000 = 1200 (m*l*)	no (with reason)	2	M1 for 140 ÷ 1000 C1 for no (oe) and 0.14 seen **OR** M1 for 1.2 × 1000 C1 for no (oe) and 1200 seen **OR** M1 1*l* = 1000m*l* C1 for no with correct explanation

1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
8.		$8 \div 20 \cdot 100$	40	2	M1 for $8 \div 20 \cdot 100$ or $\frac{8}{20} = \frac{8\times5}{20\times5}$ 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 ÷ 40 oe or 1 : 21	21	2	M1 A1 (Accept 21 : 1)
	(b)	(105 ÷ 3) × 2	70	2	M1 M1 for 105 ÷ 3 (= 35) A1
	(c)	(105 ÷ (4 + 3)) × 3	45	2	M1 M1 for 105 ÷ (4 + 3) (= 15) A1

1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0					
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 × 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 × 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	B2 for PR = 21 m (± 0.6 m) or at least 3 bushes 0.5 to 0.9 cm apart on PR (B1 for PR = 7cm (± 0.2 cm) or at least 3 bushes 1.8 to 2.2 cm apart on PR) M1 "21" ÷ 2 or for indication of 10 or 11 bushes (may be on diagram) M1 (dep on 2 marks earned previously) for '11' × 11.99 A1 cao
15.	(a)		e.g. there are no numbers which are in both A and B. e.g. A is odd, B is even	1	B1 for a statement which indicates correct meanings of intersection and empty set
	(b)		9	1	B1
	(c)		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	M1 for a method to find the gradient of the given line A1 for 1.5 oe
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 ÷ 60	25p	2	M1 for 15 ÷ 60 oe or clear attempt to find gradient A1 for £0.25 or 25p
	(b)	0.2 × 90 (=18) From graph 90 units costs £19	Yes as cost will be lower	3	M1 for Tariff B price for 90 units 20 × 90 (=1800) **or** 0.2 × 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'

<table>
<tr><th colspan="5">1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0</th></tr>
<tr><th colspan="2">Question</th><th>Working</th><th>Answer</th><th>Mark</th><th>Notes</th></tr>
<tr><td>20.</td><td></td><td>180 × 365 = 65700

65700 ÷ 1000 = 65.7

65.7 × 91.22 = 5993.154

5993.154 ÷ 100 + 28.20

= 88.13..

<table>
<tr><th>D</th><th>U</th><th>C</th><th>T</th></tr>
<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><s>336</s></td><td><s>60480</s></td><td>5517</td><td>83.37</td></tr>
</table>
</td><td>Decision (Should have a water meter installed)</td><td>5</td><td>Per year

M1 for 180 × ‘365’ (= 65700)

M1 for “65700”÷1000 (= 65.7 or 65 or 66)

M1 for “65.7” × 91.22 (=5 993.....)

A1 for answer in range (£)87 – (£)89

C1(dep on at least M1) for conclusion following from working seen

OR (per day)

M1 for 107 ÷ ‘365’ (= 0.293…)

M1 for 180 ÷ 1000 × 91.22 (= 16.4196)

M1 for 28.2 ÷ ‘365’ + ‘0.164196’ (units must be consistent)

A1 for 29 – 30(p) and 24– 24.3(p) oe

C1(dep on at least M1) for conclusion following from working seen</td></tr>
</table>

1MA1 Practice papers Set 5: Paper 3F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
21.		Some area examples: ½ × 12 × 25 = 150 8× 25 = 200 ½ × 11 × 25 = 137.5 5 × 25 = 125 ½ × 21 × 25 = 262.5 ½ × 44 × 25 = 550 ½ × 70 × 25 = 875 40 × 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)	$\frac{3}{7} \times \frac{3}{7}$	$\frac{9}{49}$	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						Mean score of students achieving grade:					
Qn	Spec	Paper	Session	Qn	Topic	Max score	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						