1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
1.			$\frac{2}{5}, \frac{1}{2}, \frac{3}{5}, \frac{3}{4}$	3	M1 for correct method to change two fractions to marks or percentages or fractions with a common denominator or decimals with at least one conversion correct. M1 for correct method to change two fractions to marks or percentages or fractions with a common denominator or decimals with all conversions correct A1 for the correct order.
2.	(*a*) (i)		(2, 3)	2	B1 cao
	(ii)		(–3, 1)		B1 cao
	(*b*)		Point plotted at (3, –4)	1	B1 cao
3.		1000 ÷ 80	12	3	P1 for working in consistent units with correct operation (maybe repeated subtraction from £10 or repeated addition to get to £10) P1 for 12.5 or 12 with remainder 4 A1 cao
4.	(*a*)		Four thousand, one hundred and seventeen	1	B1 for four thousand, one hundred and seventeen oe
	(*b*)		4100	1	B1 for 4100 in figures or words or 41 hundred

This publication may only be reproduced in accordance with Pearson Education Limited copyright policy.
©2016 Pearson Education Limited.

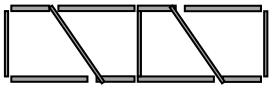
1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
5.	(*a*)		(1 A) (2 A) (6 A) (1 C) (2 C) (6 C) (1 E) (2 E) (6 E)	2	B2 for all 9 (no extras, ignore repeats) (B1 for at least 5 correct)
	(*b*)		$\frac{1}{9}$	2	M1 ft from (a) for denominator of '9' or numerator of 'number of outcomes including 2 and E' seen A1 cao **OR** M1 for $\frac{1}{3} \times \frac{1}{3}$ A1 cao
6.			No and e.g. £4.10, £4 or 10p	3	M1 for adding at least 3 of 1.25, 1.15, 85, 85 A1 for 4.1(0) or 410 C1 ft (dep on M1) for correct statement comparing £4 and their total (units must be given and correct) **or** for correct statement referring to difference e.g. 10p short (units must be given and correct) **OR** M1 for finding at least one difference between coins and costs e.g. 2 – 0.85 – 0.85 or 1.15 – 1 or 1.25 – 1 A1 for 0.10 or 10 C1 ft (dep on M1) for correct statement referring to total difference units (must be given and correct) (SC : B1 for correct figures with no working e.g. £4.10 and £4 or 10p)

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
7.	(*a*)		3 : 1	1	B1
	(*b*)		$\frac{1}{4}$	1	B1
	(*c*)		$\frac{31}{40}$	1	B1

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
8.			0.6 is bigger than $\frac{2}{5}$	3	M1 for 0.4 or 40% or fraction equivalent to $\frac{2}{5}$ with denominator = 10,15,20... OR 60% or $\frac{3}{5}$ or a fraction equivalent to $\frac{3}{5}$ with denominator = 10,15,20... A1 for two comparable figures e.g. (0.6) ,0.4 or 40% , 60% or $\frac{3}{5}, \left(\frac{2}{5}\right)$ or $\frac{6}{10}, \frac{4}{10}$ etc C1 (dep on M1) ft for correct statement from their figures **OR** M1 for a correct method involving shading or calculation e.g. drawing a rectangle 2 by 5 and shading 6 squares or 4 squares or correct method to find $\frac{2}{5}$ or 0.6 of a number A1 correct comparable figures e.g. two 2×5 rectangles, one with 4 squares shaded, one with 6 squares shaded or $\frac{2}{5} \times 20 = 8$ and $0.6 \times 20 = 12$ C1 (dep on M1) ft for correct statement from their figures **OR** M1 $\frac{2}{5}$ < half or 0.6 > half A1 $\frac{2}{5}$ < half and 0.6 > half C1 (dep on M1) ft for correct statement from their figures

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
9.	(*a*)		4	1	B1 cao
	(*b*)	14 – 4 – 8=2	2	3	M1 for 4 × 2 (=8) blue counters M1 for 14 – "8" – 4 or 10 – "8" A1 cao **OR** M1 for P(B) = 2 × $\frac{4}{14}$ oe (= $\frac{8}{14}$ oe) M1 for 1 – $\frac{"8"}{14}$ – $\frac{4}{14}$ oe or P(Y)= $\frac{2}{14}$ oe or $\frac{2}{14}$ × 14 oe A1 cao
10.	(*a*)		Trapezium	1	B1
	(*b*)		60	1	B1 for 60 ± 2
	(*c*)		obtuse	1	B1

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
11.	(*a*)		08 50	1	B1 for 08 50 or 8 50 (am) or 10 to 9
	(*b*)	13 43 – 13 29	14	1	B1 cao
	(*c*)	e.g. HL to SC: 11 02 – 11 41 Visit (at least 3 hours) SC to HL: 15 16 – 15 49 [Note : there are 9 possible solutions]	A fully correct plan showing departure times and arrival times of the two bus journeys	4	B1 for a departure time of 08 02 or 09 04 or 10 12 or 11 02 from HL M1 (indep) for a correct arrival time at SC and a correct departure time from SC (or Cartbridge St) which allows for a stay of at least 3 hours in SC (the differencing does not have to be seen) **OR** for correctly adding 3 hours to a their arrival time at SC B1 for a departure time from SC of 13 20 (13 11 from CS) or 14 24 (14 14 from CS) or 15 16 (15 07 from CS) C1 (dep on M1) for a complete correct plan which includes the departure and arrival times of the two bus journeys [Note: bus departure times may be identified by their starting times. E.g. the 15 07 from Cartbridge Street would be acceptable for the identification of the bus which arrives a HL at 15 49]
12.	(*a*)		120	2	M1 4 × 30 A1 cao
	(*b*)		Tuesday 125 miles > 120 miles 200 km > 192 km	3	M1 for 200 ÷ 8 × 5 or "120" ÷ 5 × 8 A1 for 125 or 192 or ft from "a" C1 (dep M1) Correct conclusion for their calculated figure with its correct units stated. of "125" <u>miles</u> and "a" miles **or "**192" <u>km</u> and 200 km

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
13.	(*a*)			1	B1 cao
	(*b*)	4 13 10 31 25 76	13 31 25	3	B3 all three entries correct or ft "13" with 31 and 25 [B1 one correct entry, ft "13"]
	(*c*)		$3n + 1$	2	M1 for $3n + a$ where a is an integer $\neq 1$ or n=3n+1 A1 for $3n + 1$

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
14.		Acton after 24, 48, 72, 96, 120 Barton after 20, 40, 60, 80, 100, 120 LCM of 20 and 24 is 120 9:00 am + 120 minutes **OR** Acton after 24, 48, 1h 12 m, 1h 36m, 2h Barton after 20, 40, 1 h, 1h 20m, 1h 40m, 2h LCM is 2 hours 9:00 am + 2 hours **OR** Times from 9:00 am when each bus leaves the bus station Acton at 9:24, 9:48, 10:12, 10:36, 11:00 Barton at 9:20, 9:40, 10:00, 10:20, 10:40, 11:00 **OR** $20 = 2 \times 2 \times 5$ $24 = 2 \times 2 \times 2 \times 3$ $2 \times 2 \times 2 \times 3 \times 5 = 120$	11:00 am	3	M1 for listing multiples of 20 and 24 with at least 3 numbers in each list ; multiples could be given in minutes or in hours and minutes (condone one addition error in total in first 3 numbers in lists) A1 identify 120 (mins) or 2 (hours) as LCM A1 for 11:00 (am) or 11(am) or 11 o'clock **OR** M1 for listing times after 9am when each bus leaves the bus station, with at least 3 times in each list (condone one addition error in total in first 3 times after 9am in lists) A1 for correct times in each list up to and including 11:00 A1 for 11:00 (am) or 11(am) or 11 o'clock **OR** M1 for correct method to write 20 and 24 in terms of their prime factors 2, 2, 5 and 2, 2, 2, 3 (condone one error) A1 identify 120 as LCM A1 for 11:00 (am) or 11(am) or 11 o'clock

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
15.	(*a*)	$2x + 6y + 4x – 4y$	$6x + 2y$	2	M1 for $2x + 6y$ or $4x – 4y$ or $6x$ or $2y$ A1 for $6x + 2y$ [accept $2(3x + y)$]
	(*b*)	$2 \times 4 \times p – 3 \times 4 \times p \times q$	$4p(2 – 3q)$	2	B2 cao [B1 for $2p(4 – 6q)$ or $p(8 – 12q)$ or $4(2p – 3pq)$ or $2(4p – 6pq)$ or $4p(a + bq)$ where $a \neq 0$ and $b \neq 0$]
16.	(*a*)	$30 = 2 \times 3 \times 5$ $42 = 2 \times 3 \times 7$ HCF $= 2 \times 3$	6	2	M1 for 30 or 42 written correctly as a product of prime factors or attempt to list the factors of 30 and 42 (at least 4 for each including 6) A1 for HCF = 6
	(*b*)	30 , 60, 90, ... 45, 90, 135, ...	90	2	M1 for listing multiples of 30 and 45 (at least 60 and 90) or $2 \times 3 \times 5 \times 3$ A1 for LCM = 90 SC B1 for 210
17.		$2 \times 2 \times 2 = 8$ $8 \div 2 = 4$	4 cm^3	3	M1 for $2 \times 2 \times 2 \div 2$ oe or $1 + 1 + 0.5 + 0.5 + 0.5 + 0.5$ oe A1 cao B1 (indep) for cm^3

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
18.			20	3	M1 for 330 ÷ 120 (= 2.75) or 200 ÷ 60 (= $3\ ^{1}/_{3}$) or 450 ÷ 180 (= 2.5) M1 for 450 ÷ 180 (= 2.5) AND 8 × "2.5"(= 20) A1 cao **OR** M1 for 120 ÷ 8 (= 15) or 60 ÷ 8 (= 7.5) or 180 ÷ 8 (= 22.5) M1 for 330 ÷ (120 ÷ 8) (= 22) or 200 ÷ (60 ÷ 8) (= 26.6...) or 450 ÷ (180 ÷ 8) (= 20) A1 cao **OR** M1 for multiples of 120:60:180, e.g. 240:120:360 M1 for multiples linked to 450 and 8+8+4 or scaling 2.5 oe A1 cao
19.	(*a*)		0.6 0.7, 0.3, 0.7	2	B1 for 0.6 in correct position on tree diagram B1 for 0.7, 0.3, 0.7 in correct positions on tree diagram
	(*b*)	0.4 × 0.3 =	0.12	2	M1 for 0.4 × 0.3 oe **or** a complete alternative method ft from tree diagram A1 for 0.12 oe

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
20.		2.25 × 60 ÷ 100 = 1.35 1.35 + 0.80 = 2.15 1.5 × 60 ÷ 100 = 0.90 0.90 + 1.90 = 2.80	Railtickets with correct calculations	4	NB. All work may be done in pence throughout M1 for correct method to find credit card charge for one company e.g. 0.0225 × 60(= 1.35) oe or 0.015 × 60 (= 0.9) oe M1 (dep) for correct method to find total additional charge or total price for one company e.g. 0.0225 × 60 + 0.80 or 0.015 × 60 + 1.90 or 2.15 or 2.8(0) or 62.15 or 62.8(0) A1 for 2.15 and 2.8(0) or 62.15 and 62.8(0) C1 (dep on M1) for a statement deducing the cheapest company, but figures used for the comparison must also be stated somewhere, and a clear association with the name of each company **OR** M1 for correct method to find percentage of (60+booking fee) e.g. 0.0225 × 60.8(= 1.368) oe or 0.015 × 61.9(= 0.9285) M1 (dep) for correct method to find total cost or total additional cost e.g. '1.368' + 60.8(= 62.168) or '1.368' + 0.8 (= 2.168) or '0.9285' + 61.9 (= 62.8285) or '0.9285' +1.9 (= 2.8285) A1 for 62.168 or 62.17 AND 62.8285 or 62.83 OR 2.168 or 2.17 AND 2.8285 or 2.83 C1 (dep on M1) for a statement deducing the cheapest company, but figures used for the comparison must also be stated somewhere, and a clear association with the name of each company

1MA1 Practice papers Set 3: Paper 1F (Regular) mark scheme – Version 1.0					
Question		**Working**	**Answer**	**Mark**	**Notes**
		OR 2.25 – 1.5 = 0.75 0.075 × 60 ÷ 100 = 0.45 0.80 + 0.45 = 1.25 1.25 < 1.90			**OR** M1 for correct method to find difference in cost of credit card charge e.g. (2.25 – 1.5) × 60 ÷ 100 oe or 0.45 seen M1 (dep) for using difference with booking fee or finding difference between booking fees e.g. 0.80 + "0.45"(=1.25) or 1.90 – "0.45" (=1.45) or 1.90 – 0.8 (=1.1(0)) A1 1.25 and 1.9(0) or 0.45 and 1.1(0) C1 (dep on M1) for a statement deducing the cheapest company, but figures used for the comparison must also be stated somewhere, and a clear association with the name of each company QWC: Decision and justification should be clear with working clearly presented and attributable
21.	(*a*)		3.85×10^{-3}	1	B1 cao
	(*b*)		729 100	1	B1 cao
	(*c*)		4×10^{11}	2	M1 for $2.4 \div 6 \times 10^{10--2}$ oe or $4(.0) \times 10^{n}$ or 4000 000 000 000 A1 cao
22.	(*a*)	8.2 × 10000 ÷ 100	820	2	M1 for 8.2 (± 0.2) × 10000 ÷ 100 oe A1 for 800 – 840 (SC B1 for 8.2 (± 0.2) × 10^{n}, where $n \geq 1$, e.g. 82)
	(*b*)		130	1	B1 for 128 – 132

National performance data from Results Plus

	Source of questions								Mean scores of students achieving grade:				
Qu No	Spec	Paper	Session	Qn	Topic	Max score	Mean % all	ALL	C	D	E	F	G
1	5AM1	1F	1411	Q03b	Fractions	3	64	1.91	2.95	2.26	1.56	0.93	0.29
2	1MA0	1F	1206	Q05	Coordinates in 2D	3	91	2.72	2.94	2.89	2.79	2.62	2.26
3	NEW QUESTION				Simplifying expressions	3	No data available						
4	1380	1F	906	Q08	Rounding to dp or sf	2	88	1.75	1.93	1.88	1.76	1.51	1.16
5	5MM1	1F	1111	Q15	Sample space diagrams	4	67	2.69	3.71	3.05	2.61	1.70	0.97
6	1MA0	1F	1306	Q13	Money calculations	3	74	2.22	2.68	2.53	2.37	2.10	1.67
7	NEW QUESTION				Ratio	3	No data available						
8	5MM1	1F	1306	Q07	Fractions, percentages, decimals	3	46	1.39	2.67	2.09	1.31	0.54	0.18
9	5MM1	1H	1111	Q04	Probability	4	90	3.61	3.39	3.47	1.00		
10	2540	1F	811	Q07	Properties of 2D shapes	3	60	1.81	2.40	1.99	1.52	1.06	0.58
11	1MA0	1F	1211	Q14	Time calculations	6	60	3.60	4.80	4.16	3.50	2.75	2.06
12	1MA0	1F	1311	Q18	Compound measures	5	48	2.42	3.67	2.76	2.19	1.60	1.09
13	5MM1	1F	1106	Q08	Pattern sequences	6	48	2.86	4.40	3.46	2.75	2.35	1.90
14	1MA0	1H	1206	Q07	Time calculations	3	67	2.00	1.87	1.20	0.58		
15	5MM1	1H	1106	Q08	Simplify expressions	4	68	2.71	2.44	1.45	1.00		
16	5MM1	1H	1206	Q12	HCF and LCM	4	70	2.79	2.29	1.72	1.27		
17	1380	1F	1011	Q24	Volume	3	29	0.86	1.63	0.89	0.45	0.21	0.16
18	1MA0	1F	1511	Q19	Ratio	3	39	1.17	1.55	1.25	0.95	0.67	0.46
19	1MA0	1H	1206	Q19	Probability tree diagrams	4	60	2.40	1.82	1.15	0.57		
20	1MA0	1H	1206	Q10	Percentages	4	55	2.19	1.78	0.54	0.16		
21	5MM1	1H	1506	Q13	Standard form	4	59	2.36	1.62	0.82	0.60		
22	1380	1F	1106	Q15	Bearings	3	17	0.52	1.12	0.64	0.31	0.14	0.09
						80							