Bronze Level

Mark Scheme 10

Level	IGCSE
Subject	Maths
Exam Board	Edexcel
Difficulty Level	Bronze
Booklet	Mark Scheme 10

Time Allowed: 58 minutes

Score: /48

Percentage: /100

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>95%	85%	75%	65%	55%	45%	35%	25%	<25%

1. (a)	$\dfrac{3\times 4}{15}+\dfrac{5\times 2}{15}$ or $\dfrac{12}{15}+\dfrac{10}{15}$			M1	Any pair of correct fractions with a denominator a multiple of 15
		$\dfrac{22}{15}$	2	A1	Dependent on M1
(b)	$\dfrac{9}{4}\div\dfrac{7}{2}$			M1	Correct improper fractions (may be implied by second M1)
	$\dfrac{9}{4}\times\dfrac{2}{7}$ oe			M1	
		$\dfrac{18}{28}$	3	A1	Award A1 for 9/14 if cancelling seen to have taken place.
(b)	Alternative: $\dfrac{9}{4}\div\dfrac{7}{2}$			M1	Correct improper fractions (may be implied by second M1)
	$\dfrac{9}{4}\div\dfrac{14}{4}$			M1	Denominators must be the same.
		$\dfrac{9}{14}$ oe	3	A1	Must lead directly from 2nd M1
					Total 5marks

2.	Circular arc, centre *B*, to intersect both lines *AB* and *BC*			M1	
	Equal length arcs, from intersections on each line, meeting to give a point on the bisector.	correct bisector	2	A1 dep on M1	Full construction shown.
					Total 2 marks

3. (a)	Q: (0, −1), (2, 0), (2, −1)	Triangle in correct position	1	B1	Accept without label.
(b)		Enlargement (Scale factor) 3 (Centre) (− 3, 2)	3	B1 B1 B1	Award no marks for multiple transformations. condone missing brackets around (– 3,2) Do not accept vector notation for (– 3,2)
					Total 4 marks

4. (a)		6, 0, −4	2	B2	Award B1 for any one correct.
(b)	(−1, 6), (2, 0), (4, −4)	correct line	2	M1ft A1	Plot any two points, from table with no ft errors, (dependent on B1). Straight line joining (−1, 6) to (4, −4) or better.
(c)			2	M1 A1	Draw lines $x = −1$ and $y = 2$ Correct region identified (R need not be labelled). Accept shaded or unshaded.
					Total 6 marks

Question	Working	Answer	Mark	Notes
5. (a)	89.7 ÷ 8.41....	10.66(053284)	2	M1 for 89.7 or 8.41 (Accept if first 3 sig figs correct) A1 Accept if first four sig figs correct.
(b)		10.7	1	B1ft ft if (a) > 3 sig figs
				Total 3 marks

Question	Working	Answer	Mark	Notes
6.	$\frac{4}{9}$ x $\frac{6}{5}$ oe	$\frac{24}{45}$ oe	2	M1 or $\frac{0.8}{1.5}$ A1 dep on M1. Accept $\frac{8}{15}$ if clear cancelling seen
	Alternative: $\frac{8n}{18n} \div \frac{15n}{18n}$ for any integer n	$\frac{8}{15}$ oe	2	M1 $\frac{8n}{18n} \div \frac{15n}{18n}$ A1 dep on M1. Answer must come directly from their method eg $\frac{16}{36} \div \frac{30}{36}$ must be followed by $\frac{16}{30}$ for M1A1
				Total 2 marks

Question	Working	Answer	Mark	Notes
7. (a)		Reflection (in line) x = − 2	2	B1 Accept, for example, reflect, reflected B1 Multiple transformations score B0B0
(b)		Shape in correct position	2	B2 Vertices at (1, –1) (7, –1) (7, –4) (4, –4) (4, –2) (1, –2) Condone omission of inner square and/or no shading and/or label C If not B2 then B1 for correct orientation but wrong position or rotation 90° anticlockwise about (0,0)
				Total 4 marks

Question	Working	Answer	Mark	Notes
8. (a)		$56\,d^{2}$	1	B1 cao
(b)		$12e - 20$	1	B1 Accept $- 20 + 12e$
(c)		$f(f - 2)$	2	B2 Accept $(f \pm 0)\,(f - 2)$ oe If not B2 then B1 for factors when expanded and simplified give 2 terms, 1 of which is correct except B0 for (f + a)(f – a)
(d)	$2^{3} + 6 \times 2$ or $8 + 12$	20	2	M1 A1 cao
				Total 6 marks

Question	Working	Answer	Mark	Notes
9. (a) (i)		{p, r, a}	1	B1 Withhold marks for repeats
(ii)		{p, a, r, i, s, b, u, d, e, t}	1	B1 Withhold marks for repeats
(b)		E no letters common to Prague and Lisbon	1	B1 dep on E in box Accept general reasons. e.g. "no letters common to sets A and E" or "they share no common letters" or "no intersection (between A and E)" or "no letters the same" or "no letter in A are in E".
				Total 3 marks

Question	Working	Answer	Mark	Notes
10. (a)		Correct line drawn	2	B2 Must be a single straight line passing through at least 3 of (0,4) (2,3) (4,2) (6,1) (8,0) (10,-1) If not B2 then B1 for a single straight line with a negative gradient passing through either (0,4) or (8,0) or at least 3 of (0,4) (2,3) (4,2) (6,1) (8,0) (10,-1) plotted or calculated
(b)		$x = 2$ drawn $y = 1$ drawn Correct region identified	3	B1 B1 B1 Ignore extra lines Accept R shaded or R′ shaded. Condone omission of label R
				Total 5 marks

Question	Working	Answer	Mark	Notes	
11. (a)		40, 60, 20	2	B2	Award B1 for any one correct. Allow standard form, but not trailing zeros (40.0/40.00 etc)
(b)	$\dfrac{"40" + "60"}{"20"} = \dfrac{100}{20}$		2	M1	For adding their 40 and 60 correctly (not 42.37 and 58.92) or for correct working with rounded figures.
		5		A1cao	dep on M mark awarded above.
					Total 4 marks

Question	Working	Answer	Mark	Notes	
12. (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.
					Total 4 marks