OCR
RECOGNISING ACHIEVEMENT

GCSE

Mathematics B (MEI)

General Certificate of Secondary Education **B292**

Paper 2 Foundation Tier

Mark Scheme for June 2010

Oxford Cambridge and RSA Examinations

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If answers clearly come from totally incorrect working, do not award the marks.

SECTION A

Question			Expected Answers	Marks	Notes
1	**(a)**	**(i)**	$\frac{3}{10}$	**1**	
		(ii)	30%	**1**	ft from **(i)**
		(iii)	shades two extra rectangles	**1**	
	(b)		$\frac{1}{10}$, 20%, 0.3	**2**	**M1** for one helpful conversion.
2	**(a)**		square	**1**	
			rectangle	**1**	
	(b)		2 congruent shapes marked.	**1**	squares or rectangles
3	**(a)**		(4 , 3)	**1**	
	(b)		correct point, (label and 2 sides)	**1**	
	(c)		Rhombus	**1**	ft of 'kite' if kite clearly drawn
	(d)		2 correct lines	**2**	**M1** for 1 correct, or 2 plus one extra.
4			(has met the queen very unlikely) has a heart certain is female evens is left handed. unlikely	**2**	**M1** for 2 correct
5	**(a)**		A	**1**	
			B	**1**	
			C marked	**1**	
	(b)		$\frac{1}{8}$ oe	**1**	
6	**(a)**		23	**1**	
			addition before multiplication oe	**1**	
	(b)		18	**1**	
			multiplied before squaring oe	**1**	If explanations score 0, then **SC1** for one explanation of *correct* calculation or for just "BIDMAS" or "BODMAS" (**dep** on one correct corresponding numerical value)
	(c)		$3x$	**1**	
	(d)		$\frac{y}{z}$	**1**	

Question			Expected Answers	Marks	Notes
7	(a)		diagram	1	
	(b)		14	1	
	(c)		5 8 (11) 14 17	2	**M1** for two correct
	(d)		26	1	
	(e)	(i)	there are three chairs per table...	1	must have context
		(ii)	...and two extra chairs - one on each end.	1	
8			(180 - 110 =) 70 seen 180 - 2 x 70 = 40	M1 M1 A1	
9	(a)		$\frac{2}{15}$ oe isw	1	
	(b)		0.1818..... or $0.\dot{1}\dot{8}$	2	any extra figures must be 18s **M1** for clr evid of 2.00... ÷ 11 soi by 0.18.....
	(c)		£75	2	**M1** for 250 ÷ 10 soi by 25 www (or answer of £175) **SC1** (250 ÷ *n*) x 3 where *n*>7
10*	(a)		0.4 oe	1	
	(b)		No , insufficient throws oe	1	
	(c)		450	3	**M2** for 30/200 × 3000 oe Or **M1** for 30/200 or 1 step in equivalent ratio method eg 100: 15
11*	(a)		135°	2	**M1** for 6 x 180 or 1080 or 180 – 360/8 seen
	(b)	(i)	135 + 135 soi by 270 seen Evidence of remainder considered	B1FT B1FT	Ft dep on obtuse angle ≠ 120 360 is not divisible by 135 scores 2 **SC1** for 135 is not divisible by 360
		(ii)	square	1	

SECTION B

Question			Expected Answers	Marks	Notes
12	**(a)**		4	**1**	accept 4.0.. up to 4dp
	(b)		3.45	**1**	or 3.46, 3.50
	(c)		13	**1**	or 12
13	**(a)**		10	**1**	
	(b)		2.5 circles	**2**	**M1** for 24 - (6+3+10) soi
	(c)		$\frac{1}{4}$	**1**	
	(d)		360/24 (= 15º)	**M1**	soi
			Slices of 45º, 75º, 90º and 150º ± 2º	**2**	**M1** for 1 correct slice
			Labels	**1**	Must be in correct size order from their chart.
14	**(a)**	**(i)**	6.7 or 67 cm mm	**B1** **B1**	for either number to 1mm acc for correct unit
		(ii)	36º ± 2º	**1**	
	(b)		13.4 km... 324º	**1ft 1ft**	
	(c)		correct bearing	**1**	within 2º of a reasonable north line
			4.5 cm line from O	**1**	±1 mm **SC1** line and bearing correct from A
15	**(a)**		£46.36	**2**	**M1** for 40 x 115.9 soi by figs 4636 or **M1** for conversion to £
	(b)		5000 / 115.9 (= 43.1..)	**M2**	implied by 43(l) or 47.68.. seen **M1** for 50/115.9 soi by figs 431...
			50 - 0.05 x 'their 43' = £47.85	**M1** **A1**	
16*	**(a)**		42	**1**	
	(b)		$n = 50 - 4d$ oe	**2**	**B1** for $4d$ or $n/4$ seen
	(c)		Correct line or line of points or step function starting at (0, 50) or (0, 46)	**2**	Ignore to right of $n = 12$ **B1** any line or line of points or step function going down in 4s
	(d)		$12 < x \leq 13$	**1**	

Question			Expected Answers	Marks	Notes
17*	**(a)**		20 – 30	**1**	Acept 'to' 20 < *x* < 30 etc
	(b)		Two from James' mode (average) higher oe Becky's spread less oe Becky's is positively skew and James' isn't AND Comparison of one interval OR Range is the same for both	**1 + 1**	 Accept eg, iqr, sd bigger Do not accept James' is more even i.e. cannot have both the last two to score 2
	(c)	**(i)**	Limited types of people to choose from or that he does choose or general statement about randomness	**1**	eg age, friends year group etc eg not varied, not random
		(ii)	Arrival in group/ at same time restricts choice or general statement about randomness	**1**	eg likely to live close (together) eg everyone is not equally likely to be selected
18*	**(a)**		Reflection *x* = – 1 oe	**1** **1**	
	(b)		(–5, 3), (1, 3), (1, 6)	**3**	Give **B2** for two correct vertices **SC1** for enlargement centre (4, 0) sf *k*, *k* ≠ 1 or any enlargement sf 3
19	**(a)**	**(i)**	2 x 2 x 2 x 3	**2**	**M1** for at least two prime factors isolated accept 2 x 2 x 2 or 2^3
		(ii)	8	**1**	
	(b)		28000	**1**	
20*	**(a)**	**(i)**	(*p* =) 10	**2**	**M1** for 2*p* = 20
		(ii)	(*q* =) 12	**2**	**M1** for *q*/2 = -4 + 10 or better
	(b)		*(x* =) 5*y* – *a* oe	**2**	**M1** for 5 × *y* = *x* + *a* or *y* -a/5 = *x*/5

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