OCR
RECOGNISING ACHIEVEMENT

GCSE

Mathematics B (MEI)

General Certificate of Secondary Education

Unit **B291:** Paper 1 (Foundation – Modular)

Mark Scheme for January 2011

Oxford Cambridge and RSA Examinations

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Section A

1	(a) Rectangle	**1**		
	(b) (8, 4)	**1**		
	(c) 20	**1**		
	(d) 21	**1**		
2	(a) (i) 285	**2**	**M1** for evidence of subtraction with "borrowing" or equiv. method	**M1 c**ould be implied by *k*85
	(ii) 102	**1**		
	(iii) 52	**1**		
	(iv) 86.2	**1**		
	(b) 600	**1**	Condone 900	
3	(a) (i) Ruled line, 8.3 – 8.7 cm	**1**		
	(ii) Angle 53º – 57º	**1**		Angle marked if ambiguous
	(iii) Angle 118º – 122º	**1**		Angle marked if ambiguous
	(b) More than 90º, less than 180º	**2**	**B1** for either	BOD Larger than acute angle
4	(a) (i) $\frac{7}{10}$ oe, isw	**1**		
	(ii) $\frac{127}{1000}$ oe, isw	**1**		
	(b) 0.417, 0.42, 0.8, 2.03	**2**	**B1** for three in correct order	Using "cover up" method

5	<table><tr><td>H,H</td><td>(H,T)</td></tr><tr><td>T,H</td><td>T,T</td></tr></table>	**2**	**B1** for one correct,**SC1** all 3 "seen"	Condone brackets, whole words. Could be list or wrong positions.
6	(a) (i) 8 (ii) 25 (iii) 10000 (b) $6 \times 6 \times 6$	**1** **1** **1** **1**		 or words, multiply 6 by 6 and then by 6 again. Condone "times" or ?×?×?
7	(a) 100 (b) 44	**2** **2**	**B1** for 25 seen, **SC1** for 400 **B1** for 50 or – 6	seen without letters
8	(a) Either odd or even $5n$ could be odd or even and therefore so could $5n + 1$ (b) Always even Multiple of 2	 **2** **2**	**B1** for "either odd or even" with incomplete reason. **B1** for "always even" with incomplete reason.	 Accept the substitution of two values to give an odd answer and an even answer for B2 One odd and one even example implies incomplete reason. oe eg an even no (or 2) × any number is always even
9	Sight of 0.8, 0.6 or 0.5 $\frac{96 \text{ or } 100}{}$ oe 0.48 or 0.5 or 0.4 Correct answer from *their* approx^{n}	**M1** **A1** **A1**	soi by 0.48 dependent on M1A1	

Section B

10	Scale on vertical axis Labels on horizontal axis All heights correct	**B1** **B1** **B1**	At least 1-4, or (0),2,4	Condone axes transposed.
11	(a) (i) 22 (ii) 2.6 (b) (i) kilometres, km (ii) square metres, m² (iii) grams, g	**1** **1** **1** **1** **1**		
12	(a) 52.50 (b) 13	**3** **3**	**M1** for 3 × 7.5 or 22.5 **M1** for *their (*3 × 7.5 **)** + 2 × 15 or better **B1** for 10 and **B1** for 3 If B0 scored, **M1** for $\frac{2}{3} \times$ 15 oe, and **M1** for 0.4 × 7.5 oe **Or SC2** for 14.5 or 8.00 or **SC1** for 9.5	M2 earned by 52.5 (10+4.5, 5 +3 or 5+4.5)
13	(a) 18(.00) (b) 10.8(0)	**1** **3**	**M1** for addition soi 75.6 and **M1** for ÷ 7 soi	Addition shown, or total 55 – 95 10.8p implies M2. Condone 10.80p

14	(a) 35 (Angles on) straight line add to 180º or opp angles and 90º – 55º (b) 290 www	**1** **1** **2**	 180º may be implied by 35 or working. 90 – 55 may be implied. **B1** for 360º seen or **M1** attempt at 2 × (180 – 35)	 not opp sides,
15	(a) (i) 9*a* (ii) 7*w* – 4*x*	**1** **2**	 **B1** for (+)7*w* or –4*x*	 Condone 7*w* + –4*x*
	(b) (i) 2.5 (ii) 11 (iii) 3*x* = 11 + 7 (*x* =) 6	**1** **1** **2**	**B1** for 10×2.5=25 not contradicted **B1** for 11–3=8 not contradicted **M1** for a correct first or second step **B2** for 3×6–7=11 not contradicted **B1** for embedded answer, contradicted	 eg 3*x* = 4 foll by (*x* =) $\frac{4}{3}$ or *x* – 7 = $\frac{11}{3}$ foll by (*x* =) $\frac{11}{3}$ + 7
16	(a) Fred: 73 Jo: 57 (b) Two of: Fred has higher ave. oe Fred has wider spread oe Fred has more trees/apples/data/ the tree with the max no of apples oe.	**B1** **B1** **1+1**		 Must be a comparison Average can be median or mean
17	9.8, 9.85 or 9.84(...)	**3**	**M1** for $4^2 + 9^2$ soi **M1** for $\sqrt{(4^2 + 9^2)}$	

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