GCSE

Mathematics B (MEI) (Two Tier)

General Certificate of Secondary Education **J519**

Mark Schemes for the Units

June 2008

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GCSE Mathematics B MEI Two Tier (J519)

MARK SCHEME FOR THE UNITS

B291 Foundation – Modular Paper

Section A

1.	(a) 5704	**1**		
	(b) sixty thousand two hundred (and) forty three	**1**		
	(c) 5630	**1**		
	(d)(i) 7	**1**		
	(ii) 8 or 12	**1**		5
2.	(a) R	**1**		
	(b) P	**1**		
	(c) T	**1**		
	(d) any right angle marked unambiguously	**1**		4
3.	(a)(i) 9421	**1**		
	(ii) Put the largest no. first oe	**R1**		
	(b)(i) 7	**1**		
	(ii) Nearest square no. is 49	**R1**	49 or 7^2 mentioned in explanation	4
4.	(a) 174 – 182	**2**	**B1** for 8.7 to 9.1 soi, **M1** $\times$ 20 evaluated	
	(b) 68 - 72	**1**	Or **SC1** 188-196	3
5.	(a) 5.5	**2**	**M1** $2x = 5 + 6$ or better, or $x - 2.5 = 3$	
	(b) $7c - d,$ final answer	**2**	**B1** for $7c$ or $-d$ seen, or correct answer spoilt	4
6.	(a) 12	**1**		
	(b) 8	**2**	**M1** for 2 x 4	
	m²	**1**		4

7.	(a)(i) 7	**1**		
	(a)(ii) (2+7+9+3+4) ÷ 5	**M1**		
	5	**A1**		
	Mark is more consistent, S range greater oe	**1ft**		
	Simon's mean is higher, very close, similar oe	**1ft**		5
8.	(a) 0.12 oe	**1**		
	(b) 881.64	**1**		2
9.	2| 3 5 8 8 3| 0 4 6 7 4| 1 2 3	**B2**	Allow B1 if one error or omission, or unordered	
	Key correct	**B1**		3
10.	10t= $v - u$ or v/10 = u/10+t	**B1**		
	$t = \dfrac{v - u}{10}$	**B1ft**		2

Section B

11.	(a) Kilometre	**1**	Accept abbreviations, ignore numbers	
	(b) gram	**1**		
	(c) metre	**1**		
	(d) litre	**1**		**4**
12.	(a) 3600 isw	**2**	**M1** × 0.15 or good attempt at 10% +5%	
	(b) 1440	**2**	**SC2** 20400 **B1** for 360 or 7200 or digits 144	
	(c) 49 isw	**2**	Condone 0.49 . **M1** for × 0.175 or full alternative method **SC2** £3.29	**6**
13.	(a)Tallies plus 6,3,3,1,7	**1+1ft**	Condone 1 error in tallies	
	(b)Correct heights	**1ft**		
	(c) 22	**2**	**M1** At least 3 heights added, or answer 20-24	
	(d) Robin	**1**		
	(e) 0.8	**1**		**7**
14.	(a) 10	**1**		
	(b) -11	**1**		
	(c) 7	**2**	**B1** for 21 seen or attempt at -4 and ÷ 3 in wrong order. Accept clear embedded answer	**4**
15.	52	**1**		
	Angles on a straight line (sum to 180⁰)	**R1**	180⁰ soi	**2**
16.	(a) 60 20 (b) 4 hours (c) A by £20	**B1** **B1** **B1** **B1,B1**		**5**
17.	11.6(0)	**1**		
	9.23	**1ft**		
	3.55	**2**	**M1** for ÷ 2.6 soi	**4**

18.	$4.1^2 + 5.3^2$ or 44.9 seen	**M1**		
	$\sqrt{(4.1^2 + 5.3^2)}$	**depM1**		
	6.7(......)	**A1**		
	16.1(.....)	**A1ft**	Dependent on both M marks	4

B293 Higher – Modular Paper

1	$\dfrac{86}{200} \times 100$	**M1**		
	43	**A1**		**2**
2	2 [3 5 8 8 3 [0 4 6 7 4 [1 2 3	**B2**	Allow B1 if one error or omission or unordered.	
	Key correct	**B1**		**3**
3	Front correct	**M1**	Any isometric drawing.	
	Length correct	**A1**	All correct.	**2**
4a	881.64	**B1**		
b	Uses 400, 20 and 80	**M1**		
	100	**A1**		**3**
5a	$2x-14$ or $x-7=\dfrac{5}{2}$	**B1**		
	$2x=19$ or $x=\dfrac{5}{2}+7$	**B1ft**		
		B1		
	9.5 or 19/2	**B1**		
b	$4y<24$	**B1**		
c	$y<6$	**B1**	SC 1 for 6 seen.	
	$10t=v-u$ or $\dfrac{v}{10}=\dfrac{u}{10}+t$	**B1ft**		**7**
	$t=\dfrac{v-u}{10}$			
6	Marks higher on average in science	**B1**		
	Marks more spread in science	**B1**		**2**
7a	Converts to twelfths	**M1**	At least one correct	
	Evidence of $\dfrac{77}{12}$ or $\dfrac{17}{12}$	**A1**		
	$6\dfrac{5}{12}$ oe	**A1**		
b	Deals with mixed numbers	**M1**	At least one correct	
	Inverts and multiplies or converts to eighths and divides.	**M1**		**6**
	$2\dfrac{4}{5}$ oe	**A1**		
8	Complete correct method	**M1**		
	120	**A1**		**2**
9a	Multiplies by 2^2	**M1**		
	200	**A1**		
b	Divides by 2^3	**M1**		
	500	**A1**		**4**

10a	Completes square or multiplies out $p = 4$ $q = 5$	**M1** **A1** **A1**		
b	$(x+4)^2 = -5$ cannot find square root of negative 5	**M1** **A1**	SC 1 for accurate use of formula to identify root of a negative**.**	**5**
11a	Uses $\pi \times 5.2^2$ 84.9 or 85.0 or 85	**M1** **A2**	Allow A1 for answers between 84.9 and 85	
b	Uses $\pi R^2 - \pi r^2$ Evidence of 120.7……or 120.8 35.8 to 35.9	**M1** **B1** **A1**		**6**
12a	60 20	**B1** **B1**		
b	4 hours	**B1**		
c	A by £20	**B1,B1**		**5**
13	$5.3^2 + 4.1^2$ or 44.9 seen $\sqrt{(5.3^2 + 4.1^2}$) 6.7….. 16.1….	**M1** **depM1** **A1** **A1ft**		**4**
14a	uses midpoints calculates $\sum fx = $(6120) divides $\sum fx$ by 50 122.4	**M1** **M1** **M1** **A1**	Sum of products of frequency and 'their' midpoints (within class interval).	
b	$\dfrac{3}{50}$ oe	**B1**		**5**
15a	p^{10}	**B1**		
b	$2x^2 + 3xy - 10xy - 15y^2$ $2x^2 - 7xy - 15y^2$	**B2** **B1ft**	Allow B1 if one error or omission	**4**
16a	$\cos x = \dfrac{1.3}{3.2}$ uses inverse cosine 66 · ….	**M1** **M1** **A1**		
b	$\dfrac{AC}{4.3} = \sin 62$ $4.3 \times \sin 62 = 3.8$	**M1** **A1**		**5**
17	Uses 1435 and 185 Divides height by sheets. 0.129	**B1** **M1** **A1**	Condone 0.1289..	**3**
18	Finds mode for any set of 5 integers Finds median for any set of 5 integers Calculates mean for any set of 5 integers Identifies counter example without error	**B1** **B1** **M1** **A1**		**4**

List of Abbreviations

The following abbreviations are commonly found in GCSE Mathematics mark schemes.

- Where you see **cao** in the mark scheme it means **correct answer only**.

- Where you see **ft** in the mark scheme it means **follow through**.

- Where you see **oe** in the mark scheme it means **or equivalent**.

- Where you see **rot** in the mark scheme it means **rounded or truncated**.

- Where you see **seen** in the mark scheme it means that the mark is earned if that number or expression is seen anywhere in the answer space, including on the answer line, even if it is not in the method leading to the final answer.

- Where you see **soi** in the mark scheme it means **seen or implied**.

- Where you see **www** in the mark scheme it means **without wrong working**.

- Where you see **dep** in the mark scheme it means **dependent on.**

Grade Thresholds

General Certificate of Secondary Education
Mathematics B (MEI) (Specification Code J519)
June 2008 Examination Series

Component Threshold Marks

Component		Max Mark	a*	A	b	c	d	e	f	g
B291	Raw	72	N/A	N/A	N/A	56	47	38	30	22
	UMS	83	N/A	N/A	N/A	72	60	48	36	24
B293	Raw	72	69	56	43	31	19	13	N/A	N/A
	UMS	120	108	96	84	72	60	54	N/A	N/A