

# **Mathematics B (MEI) (Two Tier)**

General Certificate of Secondary Education **J518**

## **Mark Schemes for the Units**

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**January 2008**

**J518/MS/R/08J**

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OCR Publications  
PO Box 5050  
Annesley  
NOTTINGHAM  
NG15 0DL

Telephone: 0870 770 6622  
Facsimile: 01223 552610  
E-mail: [publications@ocr.org.uk](mailto:publications@ocr.org.uk)

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### GCSE Mathematics B MEI Two Tier (J518)

#### MARK SCHEME FOR THE UNITS

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# B261 (Foundation – Modular) Paper 1

## SECTION A

Q	ANSWERS	MARK	NOTES																	
1	(a) $\frac{4}{15}$ isw (b) 6 squares shaded (c) (i) 0.3(0) (ii) 0.75	1 1 1 1		4																
2	(a) Saturday (b) $3+7+6+4+10+12+5$ 47 (c) <table border="1" style="margin-left: 20px;"> <tr> <td>J</td><td>J</td><td>R</td><td>R</td><td>R</td><td>P</td><td>P</td><td>P</td> </tr> <tr> <td>R</td><td>P</td><td>J</td><td>R</td><td>P</td><td>J</td><td>R</td><td>P</td> </tr> </table>	J	J	R	R	R	P	P	P	R	P	J	R	P	J	R	P	1 M1 A1  2	Adding at least 3 shown  B1 up to 3 errors	5
J	J	R	R	R	P	P	P													
R	P	J	R	P	J	R	P													
3	9,21,5	1+1+1		3																
4	(a) Point marked (b) Explanation	1 1	Condone lack of label eg doesn't go through O	2																
5	(a) $6 \times 4$ 24 (b) 48 cm <sup>3</sup>	M1 A1 1 ✓ U1	ft $2 \times (a)$	4																
6	$48 \div 8$ 30	M1 A1	soi 6	2																
7	(a)(i) 10f (final answer) (ii) $9b + 3c$ (final answer) (b)(i) $(x = ) 5$ (ii) $(x = ) 8$ (iii) $2x = 6 + 5$ oe, or $x - 2.5 = 3$ $(x = ) 5.5$ oe (c) 41	1 2 1 1 M1 A1 2	B1 for 9b or +3c even if spoiled  M1 for 6 or 35 seen or $2 \times 3$ and $7 \times 5$	9																

<b>8</b>	0.2 × 3000 oe 600 2400 divide by 12 200	<b>M1</b> <b>A1</b> <b>A1</b> <b>M1</b> <b>A1</b> ✓		<b>5</b>
<b>9</b>	2 <sup>3</sup> × 5 or 2 × 2 × 2 × 5 in any order	<b>2</b>	<b>M1</b> all figs seen, eg in division or tree (isw), or partial factorisation eg 8× 5	<b>2</b>

**SECTION B**

<b>Q</b>	<b>ANSWERS</b>	<b>MARK</b>	<b>NOTES</b>	
<b>10</b>	(a)(i) 9.4 (ii) Midpoint marked (b) Parallel drawn (c) Perpendicular drawn	<b>1</b> <b>1</b> <b>1</b> <b>1</b>	2 mm tolerance 2 mm tolerance Intention clear Intention clear	<b>4</b>
<b>11</b>	(a) 2 (hours) 30 (minutes) (b) 4h – 30 min, oe 3.5 (kg) oe	<b>1</b> <b>M1</b> <b>A1</b>	oe, even in body	<b>3</b>
<b>12</b>	(a) 25 (b) addition shown (at least 5) <i>their</i> 252 ÷ 9 28	<b>2</b> <b>M1</b> <b>M1</b> <b>A1</b>	<b>M1</b> data ordered soi 252	<b>5</b>
<b>13</b>	(a) 93(°) Angles on a straight line (add to 180°) (b) Reflex Bigger than 180°	<b>1</b> <b>1</b> <b>1</b> <b>1</b>	180° may be imp by wkg or ans	<b>4</b>
<b>14</b>	(a)(i) 2.3716 (ii) 2.37 (b) 16 (c) 10 (d) 1.25	<b>1</b> <b>1</b> ✓ <b>2</b> <b>2</b> <b>1</b>	ft ans >2dp corr to 2dp <b>B1</b> for 4 or 0.0625 or digits 16 seen <b>B1</b> for 11.(2...) or 11.3	<b>7</b>
<b>15</b>	(a) (4,2) (b)(i) 5, 14 (ii) At least 2 points correct ✓ Correct line drawn	<b>1</b> <b>1</b> <b>P1</b> <b>B1</b>		<b>4</b>

<b>16</b>	$0.75 \times 1.16$ $3.72 - \text{their } 0.87$ $\text{their } 2.85 \div 1.5$ (£) 1.90 cao	<b>M1</b> <b>M1</b> <b>M1</b> <b>A1</b>	soi (£)0.87 soi by (£)2.85 dep on 2 <sup>nd</sup> M mark	<b>4</b>
<b>17</b>	(a) Uses $\frac{1}{2} \times 12 \times 35$ 210 (b) $12^2 + 35^2$ $\sqrt{\quad}$ 37 (cm)	<b>M1</b> <b>A1</b> <b>M1</b> <b>M1</b> <b>A1</b>	soi 1369 Dep on $35^2 \pm 12^2$	<b>5</b>

# B263 (Higher – Modular) Paper 1

## SECTION A

Q	ANSWERS	MARKS	NOTES	
1	$0.2 \times 3000$ 600 2400 divide by 12 200	<b>M1</b> <b>A1</b> <b>A1</b> <b>M1</b> <b>A1</b> ✓		5
2	(a) collects terms $3x - x = 7$ 3.5 (b)(i) $a^7$ (ii) $b^4$	<b>M1</b> <b>A1</b> <b>B1</b> <b>B1</b>		4
3	(a) (7) (0) -5 (-8) (-9) -8 -5 (0) (7) (b) points correct parabola through points (c) -2.3 4.3	<b>B2</b> <b>B1</b> ✓ <b>B1</b> ✓ <b>B1</b> ✓ <b>B1</b> ✓	allow B1 if 1 error	6
4	(a) corresponding angles on a line (add to 180) (b) alternate opposite angles in a triangle (add to 180)	<b>B1</b> <b>B1</b> <b>B1</b> <b>B1</b> <b>B1</b>		5
5	(a) uses common denominator evidence of $1\frac{7}{12}$ or $\frac{19}{12}$ oe $5\frac{7}{12}$ (b) converts to top heavy fractions cancels by 8 or 3 7	<b>M1</b> <b>A1</b> <b>A1</b> <b>M1</b> <b>M1</b> <b>A1</b>	at least one correct	6
6	(a) 192 (b) 15	<b>B1</b> <b>B2</b>	allow B1 for evidence of 186 and 201	3

<b>7</b>	(a) evidence of scale factor 8  (b) evidence of $2^3$ 800	<b>M1</b> <b>A1</b>  <b>M1</b> <b>A1</b>		<b>4</b>
<b>8</b>	$(x+b)^2 = x + 2bx + b^2$ $a = 36$ $b = 6$	<b>B1</b> <b>B1</b> <b>B1</b>		<b>3</b>



## SECTION B

Q	ANSWERS	MARKS	NOTES	
9	(a) 11.3 (b) 31.6	B2 B1	allow B1 for 11.2	3
10	division by 17 1015	M1 A1		2
11	(a) 12.4 (b) $5x + 10$ $5x = 3$ 0.6	B1 B1 B1 ✓ B1		4
12	(a) $80 < t \leq 100$  (b) $\frac{(31+16)}{100}$ 0.47 (c) uses midpoints calculates $\sum fx = (7600)$ divides $\sum fx$ by 100 76	B1  M1  A1 M1 M1 M1 A1		7
13	(a)(i) $\frac{1}{2} \times 12 \times 35$ 210  (ii) $12^2 + 35^2$ square root = 37  (b)(i) $\tan x = \frac{35}{12}$ oe uses inverse trig 71(.07.. (ii) method for AMD AMD = 38 Uses $AMD \div 360 \times \pi \times 37^2$ Completely correct plan 871 to 876	M1 A1  B1 B1  M1  M1 A1 M1 A1 ✓ M1 M1 A1		12

14	<p>(a) Eliminate <math>y</math> (or <math>x</math>)  <math>x = 4</math> and <math>y = -3</math></p> <p>(b) <math>8x^2 + 2xy - 20xy - 5y^2</math>  <math>8x^2 - 18xy - 5y^2</math></p> <p>(c) <math>\frac{-7 \pm \sqrt{7^2 - 4 \times (1) \times 5}}{2}</math>  <math>\frac{-7 \pm \sqrt{29}}{2}</math>  <math>-0.81</math> and <math>-6.19</math></p>	<p><b>M1</b>  <b>A1</b></p> <p><b>B2</b>  <b>B1</b> ✓</p> <p><b>M1</b>  <b>A1</b>  <b>A1</b></p>	<p>allow B1 if one error</p>	<p><b>8</b></p>
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# Grade Thresholds

General Certificate of Secondary Education  
Mathematics B (MEI) (Specification Code J518)  
January 2008 Examination Series

Unit		Maximum Mark	a*	a	b	c	d	e	f	g	u
<b>B261</b>	Raw	72	NA	NA	NA	55	46	38	30	22	0
	UMS	83	NA	NA	NA	72	60	48	36	24	0
<b>B263</b>	Raw	72	65	53	41	29	19	14	NA	NA	0
	UMS	120	108	96	84	72	60	48	NA	NA	0

There was no aggregation for this specification this session

For a description of how UMS marks are calculated see:  
[http://www.ocr.org.uk/learners/ums\\_results.html](http://www.ocr.org.uk/learners/ums_results.html)

Statistics are correct at the time of publication.

**OCR (Oxford Cambridge and RSA Examinations)**  
**1 Hills Road**  
**Cambridge**  
**CB1 2EU**

**OCR Customer Contact Centre**

**14 – 19 Qualifications (General)**

Telephone: 01223 553998

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Email: [general.qualifications@ocr.org.uk](mailto:general.qualifications@ocr.org.uk)

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