

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

General Certificate of Secondary Education J518

**Mark Schemes for the Units**

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**June 2007**

**J518/MS/R/07**

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## CONTENTS

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

#### MARK SCHEME FOR THE UNITS

<b>Unit</b>	<b>Content</b>	<b>Page</b>
B261	(Foundation – Modular) Paper 1	1
B263	(Higher – Modular) Paper 1	7
*	Grade Thresholds	11



**Mark Scheme B261  
June 2007**

## SECTION A

		MARKS	NOTES	
1	(a) 30,22,20 (b) 3,2,1½ symbols (c) Thursday	B1 B2 B1	B1 1 error	4
2	(a) 49 (b) 6 (c) A6 B3 given C7 D5 E1	B1 B1 B1  B1 B1 B1		6
3	(a)(i) 150g (ii) 68kg (b) arrow pointing to 55	B1 B1 B1	+/- 2mm	3
4	(a) $56 \div 8 \times 3$ oe 21  (b) 16870	M1 A1  M2 A1	SC1 for 7 seen  Any correct full method M2 1 arithmetic error M1 2 arithmetic errors After M0 B1 2410 or 14460 seen	5
5	(a) V ( 4, 5) W ( 1, -2) (b) Z plotted at (-2, -3)	B1 B1 B1		3
6	(a)(i) 0.08 (ii) 2.48 (b) $9 \times 4$ soi by figs 36 36%	B1 B1 M1 A1		4
7	(a) 14.4  (b) 5.2  (c) 15.1	B1  B1  B1	Penalise once throughout for error in key interpretation Accept 5.3 for use of upper/lower bounds only	3
8	(a) 6 (b) $-1 \times 5$ or $2 \times 3$ soi 1	B1 M1 A1		3

		<b>MARKS</b>	<b>NOTES</b>	
<b>9</b>	$60 \times 15$ $\div 100$ 9m	<b>M1</b> <b>M1</b> <b>A1</b>	Can be implied by figs 9 seen  SC2 for 900 seen in working and no further error except conversion	<b>3</b>
<b>10</b>	$11x+1$	<b>B2</b>	B1 for $11x$ or $1$ or $5x + 5$ or $6 - 4$	<b>2</b>

## SECTION B

		MARKS	NOTES	
11	(a) £5.60 their $\text{£}3(.00) \div 60\text{p}$ 5 £8.60ft  (b) £20 – their £10.47 £9.53	<b>B1</b> <b>M1</b> <b>A1</b> <b>A1ft</b>  <b>M1</b> <b>A1</b>	Can be implied by figs 5  Their £5.60 + £3.00	<b>6</b>
12	(a)(i) 10 (ii) 7 (b) 8r (c) $4(x+2)$ (d) even or multiple of 2,4 or in the 4 times table	<b>B1</b> <b>B1</b> <b>B1</b> <b>B1cao</b> <b>B1</b>	Condone omission of final bracket	<b>5</b>
13	(a) 892  (b) £62.44 their $\text{£}62.44 + 18.60$ £81.04	<b>B1</b>  <b>B1ft</b> <b>M1</b> <b>A1ft</b>	  must be correct to 2 dp's	<b>4</b>
14	(a)(i) $100 \times 0.20 + 85.50$ £105.50  (b) $(\text{£}137.90 - \text{£}85.50) \div 0.20$ 262	<b>M1</b> <b>A1</b>  <b>M1</b> <b>A1</b>	  implied by $(-)\text{289.6}$	<b>4</b>
15	(a)(i) 5.4 (ii) $1.9 \times 0.8$ 1.52 (b) their area $\times 1.75$ 2.66	<b>B1</b> <b>M1</b> <b>A1</b> <b>M1</b> <b>A1ft</b>	  Ft must be to at least 3sf or Sc1 for $1.75^3$ soi by $5.35(\dots)$	<b>5</b>
16	$75 + 62 + \dots + 68$ or 418 their $418 \div 8$ 52.25 (rot to at least 2 sf)	<b>M1</b> <b>M1</b> <b>A1</b>	358.5 implies M2	<b>3</b>
17	$12.45 \div 28.7 \times 100$ 43.(37...) 43.4	<b>M1</b> <b>A1</b> <b>A1ft</b>	Ft must show unrounded to 2dp or more, and be of equivalent difficulty, i.e. rounds up.	<b>3</b>



		<b>MARKS</b>	<b>NOTES</b>	
<b>18</b>	Should be $\times$ by 3.5 She did not $\div$ by 2 $12.8 \times 3.5 \div 2$ oe	<b>B1 either reason B1</b>	If Zero for qu., then Sc1 for 22.4	<b>2</b>
<b>19</b>	$2 \times 125.6$ $(2 \times) \pi \times 39.8$ $(\pi \times 39.8 \times 2) + (125.6 \times 2)$ $501 - 501.3$	<b>M1 M1 DM1 A1</b>	Implied by 251.2 Implied by 125(.05) or 250(.1)	<b>4</b>



**Mark Scheme B263**  
**June 2007**

## SECTION A

		MARKS	NOTES	
1	60×15 ÷100 9	M1 M1 A1	SC2 for 900	3
2	(a) Correct plan view 6×2 or 2×2 or 4×2  (b) Completely correct  (c) 8 uses 1 cm <sup>2</sup> = 100 mm <sup>2</sup> 5600	B1  B1  B1 M1 A1		5
3	±3x or ±3 seen 3x = -3 - 1	M1 A1 A1	SC2 for embedded answer	3
4	(a) Method for factor three to primes oe 2×2×3×3×3 2 <sup>2</sup> × 3 <sup>3</sup>  (b) $\frac{1}{1.5}$ or $\frac{1}{\frac{3}{2}}$ $\frac{2}{3}$	M1 A1 A1  M1  A1	Condone 1 error	5
5	(a) 7.32 × 10 <sup>7</sup>  (b) 0.0067, 9.1×10 <sup>-2</sup> , 8.7×10 <sup>4</sup> , 230000	B1  B2	Allow M1 for conversion to same form Or B1 for 1 out of order	3
6	(a)(i) 33 (ii) 20  (b) girls oe, larger sample	B1 B1  B1		3

		MARKS	NOTES	
7	(a) $\frac{17-2}{3-0}$  (b) $y = 5x + 2$  (c) $y = 5x + 3$ Gradient = 5 or grad = grad of AB.	<b>B1</b>  <b>B2</b>  <b>B1</b> <b>DB1</b>	Minimally: 15/3  B1: $y = 5x + c$ or $y = mx + 2, m \neq 0$ or $5x + 2$	<b>5</b>
8	31 or 775 squares 40 or 1000 squares 77.5	<b>B1</b> <b>B1</b>	Allow 77, 78,75 or 80 if B2 earned	<b>3</b>
9	$\sqrt{36}$ or $\sqrt{2} \times \sqrt{2} \times \sqrt{9}$ or $2 \times \sqrt{9}$ or $3 \times \sqrt{2}$ 6	<b>M1</b> <b>A1</b>		<b>2</b>
10	Attempts to factorise top or bottom $(2x + 1)(x - 3)$ $(x + 1)(x - 3)$ $\frac{2x+1}{x+1}$	<b>M1</b> <b>A1</b> <b>A1</b> <b>A1</b>	Must be of form $(ax + b)(cx + d)$	<b>4</b>
11	(a) 17 (b) 30 (c) uses relevant distance $\div$ time deals with time correctly 22	<b>B1</b> <b>B1</b> <b>M1</b> <b>M1</b> <b>A1</b>		<b>5</b>
12	$0.15 \times 45$ oe subtract from 45 38.25	<b>M1</b> <b>M1</b> <b>A1</b>	Allow M2 for $0.85 \times 45$ o.e.	<b>3</b>
13	(a) $5x > 12$ $x > 2.4$  (b) first step correct $\frac{s-12}{4}$ or $\frac{s}{4} - 3$  (c) $13 - x = 5 \times 3$ combines 13 and $5 \times 3$ correctly -2  (d) equates coefficients adds or subtracts as appropriate $x = 10,$ $y = -2$	<b>M1</b> <b>A1</b>  <b>B1</b> <b>B1</b>  <b>M1</b> <b>M1</b> <b>A1</b>  <b>M1</b> <b>M1</b> <b>A1</b>	Allow for $5x = 12$ or better  Accept $x > \frac{12}{5}$  Condone 1 arithmetic slip  Answers alone can earn B1,B1	<b>11</b>

		MARKS	NOTES	
14	Combines 2 straights (2) $\pi \times 39.8$ Completely correct plan 501 to 501.3	M1 M1 M1 A1		4
15	(a) Midpoints seen Calculates $\Sigma fx$ , for x in correct range. Divides $\Sigma fm$ by $\Sigma f$ 10020 (b) $\frac{4}{\Sigma f}$	M1 M1 M1 A1 B1✓	Needs at least 4 correct $\Sigma fx = 751500$	5
16	Divides by 11 or $\pi$ $r^2 = \frac{475}{11 \times \pi}$ Finds square root 3.7 to 3.71	M1 M1 M1 A1		4
17	(a) Mention of similar figs or enlargement (b) Uses $V = \frac{1}{3}\pi r^2 h$  large cone – small cone 386.5 to 388.5	B1 M1 DM1 A1	670 or 282  670 – 282 or scale factor $1 - \left(\frac{3}{4}\right)^3$ ( $\approx 0.57\dots$ ) Accept answers in [386.5, 388.5]	4

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June 2007 Assessment Series**

**Unit Threshold Marks**

<i>Unit</i>		<b>Maximum Mark</b>	<b>a*</b>	<b>a</b>	<b>b</b>	<b>c</b>	<b>d</b>	<b>e</b>	<b>f</b>	<b>g</b>	<b>u</b>
<b>B261</b>	Raw	72	NA	NA	NA	55	46	37	28	19	0
	UMS	83	NA	NA	NA	72	60	48	36	24	0
<b>B263</b>	Raw	72	66	53	40	28	18	13	NA	NA	0
	UMS	120	108	96	84	72	60	48	NA	NA	0

For a description of how UMS marks are calculated see;  
[http://www.ocr.org.uk/exam\\_system/understand\\_ums.html](http://www.ocr.org.uk/exam_system/understand_ums.html)

Statistics are correct at the time of publication





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