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CE AT 13+

# ADDITIONAL MATHEMATICS

# ISEB

Independent Schools  
Examinations Board

## Specimen Paper Mark Scheme

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Date

### Information

The majority of the marks should be awarded for good working/reasoning/explanation.

Marks should be deducted for mathematically incorrect working.

Deduct a maximum of 1 mark per question for incorrect/missing units up to a total of 5 marks.

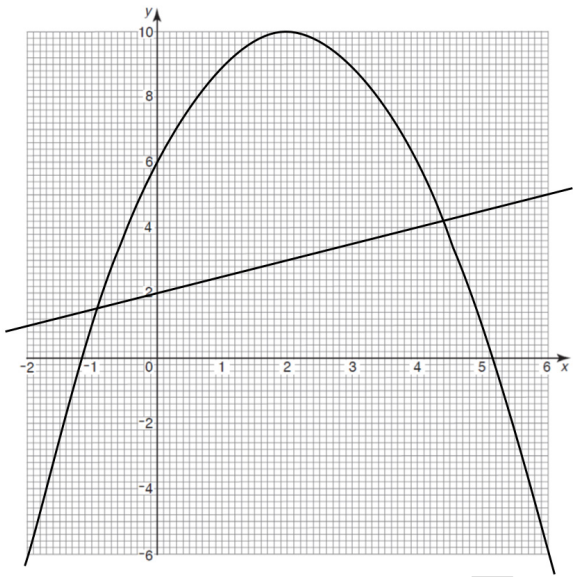
Credit should be given for good attempts and ideas.

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# ADDITIONAL MATHEMATICS

Q.	Answer	Mark	Additional Guidance
1.	a) 8      b) 12      c) 26	5	
2.	187 cm <sup>2</sup>	4	
3.	a) $y = 5 \text{ cm}$ $z = 11 \text{ cm}$	6	
	b) 28 800 cm <sup>3</sup>	4	
	c) 326.6496 kg	3	or rounded sensibly
4.	a) $t_{12} = 63$ $t_{24} = 123$	4	
	b) i) $t_{50} = 348$ ii) $t_{50} = 2501$	6	
	c) 35	4	
5.	$x = 5$	5	
6.	adult: £12      child £8	6	
7.	a) $3y(8x + 5y - 1)$	2	
	b) $\frac{2m}{3}$	3	
	c) $96.1 \times 4.068 + 3.9 \times 4.068$ $= 4.068(96.1 + 3.9)$ $= 4.068 \times 100$ $= \underline{406.8}$	3	or similar
8.	a) $x = 75^\circ$	4	
	b) 6	2	
	c) $\hat{PBC} = 60^\circ$ $\hat{ABC} = 180^\circ - 60^\circ$ $= 120^\circ$ $\hat{PBC} + \hat{ABC} = 180^\circ$ $\therefore \hat{PBA}$ is a straight line	3	or similar must explain
9.	a) 814.4473 ... m	4	rounded sensibly
	b) £640 700	4	

Q.	Answer	Mark	Additional Guidance																				
10. a)	$6.25 \times 10^{13}$	3																					
b)	152577319587628 or $1.53 \times 10^{14}$	4	expressed/rounded sensibly																				
11.	42	5																					
12.																							
a)	parabola smoothly drawn through the points and labelled  expect table of values: <table border="1" data-bbox="284 1216 868 1296"><tr><td>x</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>y</td><td>-6</td><td>1</td><td>6</td><td>9</td><td>10</td><td>9</td><td>6</td><td>1</td><td>-1</td></tr></table>	x	-2	-1	0	1	2	3	4	5	6	y	-6	1	6	9	10	9	6	1	-1	6	
x	-2	-1	0	1	2	3	4	5	6														
y	-6	1	6	9	10	9	6	1	-1														
b)	expect $y = \frac{x}{2} + 2$ drawn $x \approx 0.9$ and $x \approx 4.4$ from graph	5																					
13.	$\text{area} = 2 \times \frac{3}{4} \pi r^2 + r^2$ $= \frac{3\pi r^2}{2} + r^2$ $= r^2 \left( \frac{3\pi}{2} + 1 \right)$	5	or equivalent																				
Total		100																					