

**Education Bureau**  
**Territory-wide System Assessment 2014**  
**Secondary 3 Mathematics**  
**Marking Scheme**

Note (for Section B and C of each sub-paper):

**\*Mark for Answer:**

- (1) The Mark for Answer may be given when there is a correct answer without any work shown.
- (2) If the work shown is incorrect, the Mark for Answer will not be given.
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**\*\*Mark for Presentation:**

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r.t. xxx means “accept answers which can be rounded to xxx” .

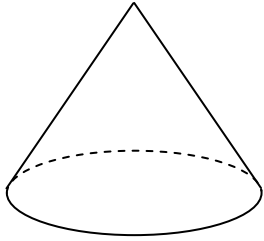
Steps that may be skipped are shown in shade.

Alternative suggested answers are shown in boxes.

## Section A – Sub-paper 1 (9ME1) (1 mark each)

1. B (9ME2-1)
2. C
3. A
4. C
5. D
6. B (9ME4-6)
7. B
8. D (9ME3-8)
9. C
10. A
11. C (9ME2-11)
12. D
13. C
14. D
15. A
16. A (9ME4-16)
17. B
18. A
19. B
20. D (9ME3-20)

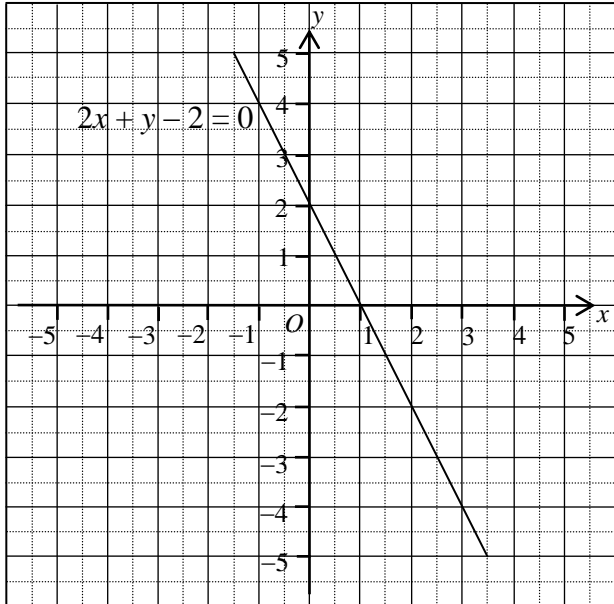
## Section B – Sub-paper 1 (9ME1)

Question Number	Suggested Answers	Marks	Notes
21. (9ME4-21)	(i) 0 (ii) -4	1	Must be all correct
22.	$1.17 \times 10^4$ km	1	
23.	The number of female clerks in the company is <u>459</u> .	1	
24.	$S = \underline{65}$	1	
25. (9ME3-25)	$3n$	1	
26.	$2a^2 + 5ab$	1	
27. (9ME4-27)	$2x^2 + 3x + 1$	1	
28.	$(2x-1)(x-2)$	1	
29.	$\frac{15y}{4x}$	1	
30.	i. $\frac{5}{7}$ $\boxed{<}$ $\frac{5}{6}$ ii. -0.88 $\boxed{>}$ -8.8	1	Must be all correct
31.	$x \leq 7$	1	
32. (9ME3-35)	$x = \underline{56^\circ}$	1	Unit may not be considered
33. (9ME2-33)		1	Or other correct answers
34. (9ME4-34)	(a) $x = \underline{4}$ (b) $y = \underline{20}$	1 (34a) 1 (34b)	Unit may not be considered
35.	$x = \underline{52}$	1	Unit may not be considered

Question Number	Suggested Answers	Marks	Notes
36.	$DE$	1	
37.	$A, B$	1	Must be all correct
38. (9ME4-38)	The coordinates of point $P$ are ( <u>-4</u> , <u>-2</u> ).	1	Must be all correct and in order
39.	$\theta =$ <u>24.8°</u>	1	r.t. 24.8° Unit may not be considered
40. (9ME2-40)	$(4) \rightarrow (2) \rightarrow (3) \rightarrow (1)$	1	
41.	The modal class of the time for the 50 athletes to finish the race is <u>35</u> min – <u>39</u> min.	1	Must be all correct

## Section C – Sub-paper 1 (9ME1)

Question Number	Suggested Answers	Marks	Notes
42.	Selling price = $4500(1 + 40\%)$ $= 6300$ $\therefore$ The selling price of this painting is \$ 6 300.	1 (42-1) 1* (42-2) 1** (42-3)	
43.	The area of the sector $= \pi(5^2) \left( \frac{130^\circ}{360^\circ} \right)$ $\approx 28.36160034$ $= 28.4 \text{ cm}^2$ (corr. to the nearest $0.1 \text{ cm}^2$ )	1 (43-1) 1* (43-2) 1** (43-3)	r.t. $28.4 \text{ cm}^2$
44.	(a) $\pi r^2 = 81\pi$ $r = 9$ (b) The circumference of the circle $= 2\pi(9)$ $= 18\pi \text{ cm}$	1 (44a-1) 1* (44a-2) 1 (44b-1) 1* (44b-2) 1** (44-5)	Correct method
45.	(a) $\frac{w^{11}}{w^8}$ $= w^3$ (b) $\frac{x^{11}}{(x^2)^4}$ $= \frac{x^{11}}{x^{2 \times 4}}$ $= \frac{x^{11}}{x^8}$ $= x^3$	1* (45a) 1 (45b-1) 1* (45b-2)	Using $(x^m)^n = x^{m \times n}$ Correct final answer (getting marks 1 1)

Question Number	Suggested Answers		Marks	Notes								
46. (9ME3-45)	<table><tr><td><math>x</math></td><td>-1</td><td>0</td><td>3</td></tr><tr><td><math>y</math></td><td>4</td><td>2</td><td>-4</td></tr></table>		$x$	-1	0	3	$y$	4	2	-4	1* (46-1)	Must be all correct
	$x$	-1	0	3								
	$y$	4	2	-4								
		1 (46-2)	In case the data in the above table is incorrect, students can still use the ordered pairs to draw a straight line. The line must pass through (0, 2) and the range of $x$ must include the values from -1 to 3.									
			1* (46-3)	Correct straight line (include: correct position, use ruler to draw the line, pass through the 3 points and extend two ends of the line) If the data in the table is correct but not complete and the graph is correct, (0, 1, 1) can be given.								
47. (9ME3-47)	(Students must find the approximations for the prices of these 3 items.)  The total amount = 312 + 601 + 121 ≥ 300 + 600 + 100 = 1000  ∴ Miss Lee <b>can</b> join the lucky draw.	0 0 No evidence of using estimation strategies nor giving reasonable justification	<ul style="list-style-type: none"><li>Exact calculation only</li><li>The estimate is given only after exact calculation</li><li>Use rounding up to estimate the prices</li></ul>									
		1 0 Partial evidence of using estimation strategies, but the solution is incomplete or contains errors	<ul style="list-style-type: none"><li>One correct approximation only</li><li>Estimate correctly, but the total amount is omitted</li><li>Estimate correctly, but the total amount is less than \$1000</li><li>Correct method used, but minor errors occurred</li></ul>									
		1 1 Estimate with reasonable justification	<ul style="list-style-type: none"><li>No need to consider unit/presentation</li><li>Accept using '≈' instead of '≥'</li><li>The conclusion must be correct and aligned with a reasonable explanation</li></ul>									

[illegible]

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Steps that may be skipped are shown in shade.

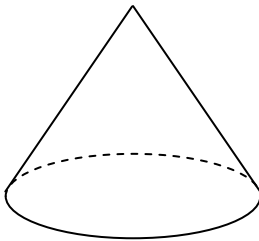
Alternative suggested answers are shown in boxes.



## Section A – Sub-paper 2 (9ME2) (1 mark each)

1. B (9ME1-1)
2. A (9ME3-2)
3. D
4. B
5. D
6. C
7. A
8. B
9. A
10. C (9ME4-10)
11. C (9ME1-11)
12. C
13. C (9ME3-13)
14. B
15. A
16. B
17. D
18. D (9ME4-18)
19. D
20. A

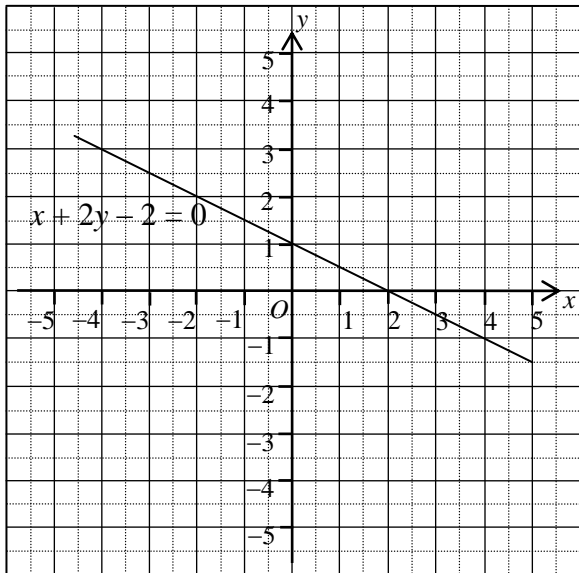
## Section B – Sub-paper 2 (9ME2)

Question Number	Suggested Answers	Marks	Notes
21.	$A = 20 / + 20$ $B = -10$ $C = -30$	1	Must be all correct
22. (9ME4-22)	$-6$	1	
23. (9ME3-23)	The rainfall in July : the rainfall in August = <u>5</u> : <u>4</u>	1	Accept $1:\frac{4}{5}$ / $\frac{5}{4}:1$ / 1:0.8 / 1.25:1
24.	$x = \underline{4}$ $y = \underline{2}$	1	Must be all correct
25.	The value of the 10 <sup>th</sup> term of the sequence is <u>110</u> .	1	
26. (9ME4-26)	$5h + 3k$	1	
27.	$(x-2)^2$ / $(x-2)(x-2)$	1	
28. (9ME4-28)	$(x-5)(x+1)$	1	
29. (9ME3-29)	$x = \underline{-2}$	1	
30.	$4a^2 + 4ab + b^2$	1	
31.	$T = \underline{30}$	1	
32.	The base radius of the cylinder is <u>6</u> cm.	1	
33. (9ME1-33)		1	Or other correct answers
34.	$x = \underline{84}$	1	Unit may not be considered
35. (9ME4-35)	$x = \underline{29^\circ}$	1	Unit may not be considered

Question Number	Suggested Answers	Marks	Notes
36. (9ME3-36)	<i>BAEH</i> or its correct permutation / <i>BCEF</i> or its correct permutation	1	
37.	$x = \underline{57}$	1	Unit may not be considered
38.	The polar coordinates of point <i>A</i> are ( <u>2</u> , <u>30°</u> ).	1	Must be all correct and in order
39.	$AB = \underline{13}$ units	1	
40. (9ME1-40)	(4) $\rightarrow$ (2) $\rightarrow$ (3) $\rightarrow$ (1)	1	
41. (9ME3-40)	The weighted mean mark of Alfred is <u>73.2</u> .	1	

## Section C – Sub-paper 2 (9ME2)

Question Number	Suggested Answers	Marks	Notes																											
42.	<p>The weight of copper</p> $= 50 \times \frac{22}{3+22}$ <p>= 44 kg</p>	<p>1 (42-1)</p> <p>1* (42-2)</p> <p>1** (42-3)</p>																												
43. (9ME4-42)	<p>Cost price = 1200 + 300</p> <p>= \$1500</p> <p>Loss per cent = <math>\frac{300}{1500} \times 100\%</math></p> <p>= 20%</p>	<p>1* (43-1)</p> <p>1 (43-2)</p> <p>1* (43-3)</p> <p>1** (43-4)</p>																												
44.	<p>The volume of the prism</p> $= \frac{3 \times 4}{2} \times 6$ <p>= 36 cm<sup>3</sup></p>	<p>1 (44-1)</p> <p>1* (44-2)</p> <p>1** (44-3)</p>																												
45.	<table><tr><th colspan="2">Table 1</th></tr><tr><th>Number of volunteering hours</th><th>Frequency</th></tr><tr><td>1 – 10</td><td>5</td></tr><tr><td>11 – 20</td><td>5</td></tr><tr><td>21 – 30</td><td>1</td></tr><tr><td>31 – 40</td><td>4</td></tr><tr><td>41 – 50</td><td>2</td></tr><tr><td>51 – 60</td><td>3</td></tr></table> <table><tr><th colspan="2">Table 2</th></tr><tr><th>Number of volunteering hours</th><th>Frequency</th></tr><tr><td>1 – 15</td><td>8</td></tr><tr><td>16 – 30</td><td>3</td></tr><tr><td>31 – 45</td><td>5</td></tr><tr><td>46 – 60</td><td>4</td></tr></table>	Table 1		Number of volunteering hours	Frequency	1 – 10	5	11 – 20	5	21 – 30	1	31 – 40	4	41 – 50	2	51 – 60	3	Table 2		Number of volunteering hours	Frequency	1 – 15	8	16 – 30	3	31 – 45	5	46 – 60	4	<p>1* (45-1)</p>   <
Table 1																														
Number of volunteering hours	Frequency																													
1 – 10	5																													
11 – 20	5																													
21 – 30	1																													
31 – 40	4																													
41 – 50	2																													
51 – 60	3																													
Table 2																														
Number of volunteering hours	Frequency																													
1 – 15	8																													
16 – 30	3																													
31 – 45	5																													
46 – 60	4																													

Question Number	Suggested Answers			Marks	Notes								
46. (9ME4-46)	<table><tr><td><math>x</math></td><td>-4</td><td>2</td><td>4</td></tr><tr><td><math>y</math></td><td>3</td><td>0</td><td>-1</td></tr></table>			$x$	-4	2	4	$y$	3	0	-1	1* (46-1)	Must be all correct
	$x$	-4	2	4									
	$y$	3	0	-1									
			1 (46-2)	In case the data in the above table is incorrect, students can still use the ordered pairs to draw a straight line. The line must pass through (2, 0) and the range of $y$ must include the values from -1 to 3.									
				1* (46-3)	Correct straight line (include: correct position, use ruler to draw the line, pass through the 3 points and extend two ends of the line) If the data in the table is correct but not complete and the graph is correct, (0, 1, 1) can be given.								
47.	The height of the wall $\approx (1.5 \div 3 \times 8) \text{ m}$ $= 4 \text{ m}$ Acceptable range: 3.5 m to 4.5 m			0 0 No evidence of using estimation strategies nor giving reasonable justification	<ul style="list-style-type: none"><li>♦ Answer only, without any explanation</li><li>♦ The explanation is irrelevant or unreasonable</li></ul>								
				1 0 Partial evidence of using estimation strategies, but the solution is incomplete or contains errors	<ul style="list-style-type: none"><li>♦ Using reasonable estimation strategies, but the explanation is incomplete</li><li>♦ The explanation is reasonable, but the answer is not within the acceptable range</li><li>♦ The explanation is reasonable, but minor errors occurred</li></ul>								
				1 1 Estimate with reasonable justification	<ul style="list-style-type: none"><li>♦ The answer must be supported by reasonable explanation and within the acceptable range</li></ul>								

Question Number	Suggested Answers	Marks	Notes
48. (9ME4-48)	$\angle BCA + 145^\circ = 180^\circ$ $\angle BCA = 35^\circ$ $\therefore BA = BC$ $\angle BAC = 35^\circ$ $35^\circ + 35^\circ + x = 180^\circ$ $x = 110^\circ$	1 (48-1) 1 (48-2) 1* (48-3) 1** (48-4)	For $\angle BCA = \angle BAC$ Can be absorbed
	$\angle BCA + 145^\circ = 180^\circ$ $\angle BCA = 35^\circ$ $\therefore BA = BC$ $\angle BAC = 35^\circ$ $35^\circ + x = 145^\circ$ $x = 110^\circ$	1 (48-1) 1 (48-2) 1* (48-3) 1** (48-4)	For $\angle BCA = \angle BAC$ Can be absorbed
49.	$\tan 33^\circ = \frac{8}{AC}$ $AC \approx 12.31891971$ $AC = 12.3 \text{ m (corr. to 1 d.p.)}$ $\therefore$ The length of the shadow is 12.3 m.	1 (49-1)  1* (49-2) 1** (49-3)	r.t. 12.3 m
50. (9ME4-49)	Mean height $= \frac{142 \times 14 + 147 \times 24 + 152 \times 8 + 157 \times 4}{50}$ $= \frac{1988 + 3528 + 1216 + 628}{50}$ $= \frac{7360}{50}$ $= 147.2 \text{ cm}$	1 (50-1)     1* (50-2) 1** (50-3)	

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r.t.  $xxx$  means “accept answers which can be rounded to  $xxx$ ” .

Steps that may be skipped are shown in shade.

Alternative suggested answers are shown in boxes.

## Section A – Sub-paper 3 (9ME3) (1 mark each)

1. A
2. A (9ME2-2)
3. A
4. C (9ME4-4)
5. D
6. B
7. C
8. D (9ME1-8)
9. A
10. D
11. A
12. B
13. C (9ME2-13)
14. C (9ME4-14)
15. B
16. D
17. B
18. B
19. C
20. D (9ME1-20)



## Section B – Sub-paper 3 (9ME3)

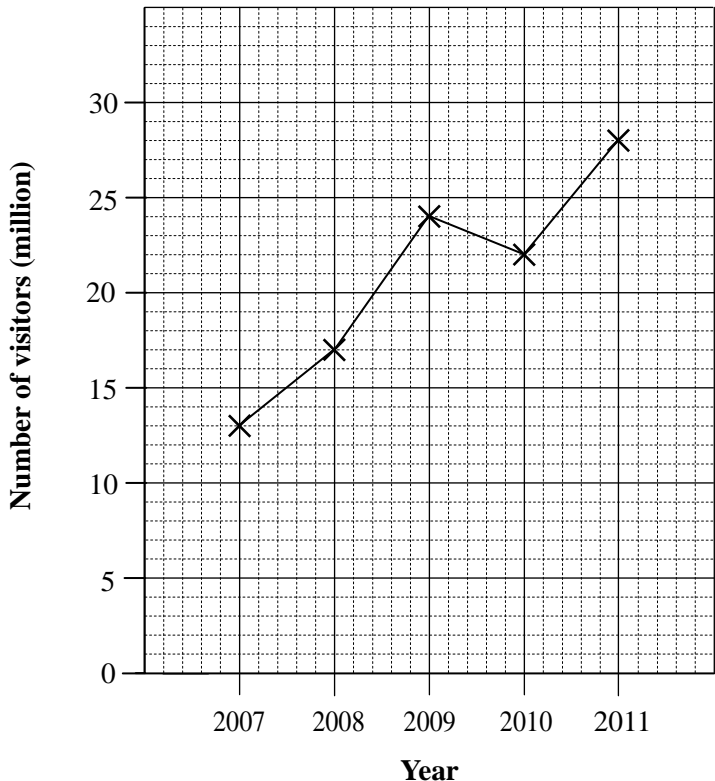
Question Number	Suggested Answers	Marks	Notes
21.	17	1	
22.	0.006	1	
23. (9ME2-23)	The rainfall in July : the rainfall in August = <u>5</u> : <u>4</u>	1	Accept $1:\frac{4}{5}$ / $\frac{5}{4}:1$ / 1:0.8 / 1.25:1
24. (9ME4-24)	The machine can produce <u>1080</u> bottles of sauce in one hour.	1	
25. (9ME1-25)	$3n$	1	
26.	$2x^3 - 2x^2 + 6x$	1	
27.	$2x(x+3)$	1	
28.	$(1+5x)(1-5x)$	1	
29. (9ME2-29)	$x = \underline{-2}$	1	
30. (9ME4-31)	$x < 6$	1	
31.	The volume of the cone is <u><math>1500\pi</math></u> $\text{cm}^3$ .	1	
32.	$\triangle FGH$ / $\triangle FHG$ / $\triangle GFH$ $\triangle GHF$ / $\triangle HFG$ / $\triangle HGF$	1	
33.	Figure <u>T</u> and Figure <u>A</u> have the same number of axes of symmetry.	1	Must be all correct
34.	(a) $x = \underline{70}$ (b) $y = \underline{12}$	1	Must be all correct Unit may not be considered
35. (9ME1-32)	$x = \underline{56^\circ}$	1	Unit may not be considered
36. (9ME2-36)	$BAEH$ or its correct permutation / $BCEF$ or its correct permutation	1	
37. (9ME4-37)	$AC = \underline{4}$ cm	1	
38.	$x = \underline{23}$	1	Unit may not be considered
39.	(a) There are <u>25</u> students in 3A. (b) The least lunch expense of 3A students last Friday was \$ <u>13</u> . (c) <u>6</u> students spent more than \$45 on their lunch last Friday.	1* (39a)  1* (39b) 1* (39c)	
40. (9ME2-41)	The weighted mean mark of Alfred is <u>73.2</u> .	1	

## Section C – Sub-paper 3 (9ME3)

Question Number	Suggested Answers	Marks	Notes
41.	$\text{Amount} = 2000 \times (1 + 5\%)^2$ $= \$2205$ $\text{Interest} = 2205 - 2000$ $= \$205$	1 (41-1) 1* (41-2)  1* (41-3) 1** (41-4)	
42.	The length of $\widehat{AB}$ $= 2\pi(6)\left(\frac{50^\circ}{360^\circ}\right)$ $\approx 5.235987756$ $= 5.24 \text{ cm (corr. to 3 sig. fig.)}$	1 (42-1)  1* (42-2) 1** (42-3)	r.t. 5.24 cm
43.	The surface area of the sphere $= 4\pi \times 8^2$ $\approx 804.2477193 \text{ cm}^2$ $= 804 \text{ cm}^2 \text{ (corr. to the nearest cm}^2\text{)}$	1 (43-1)  1* (43-2) 1** (43-3)	r.t. 804 cm <sup>2</sup>
44.	$\begin{cases} x = 2y + 3 & \dots(1) \\ x - y - 10 = 0 & \dots(2) \end{cases}$ Substitute (1) into (2): $2y + 3 - y - 10 = 0$ $y = 7$ Substitute $y = 7$ into (1) $x = 2(7) + 3$ $x = 17$	 1 (44-1) 1* (44-2)  1 (44-3)  1* (44-4)	Correct method (eliminating one of the variables) Correct value of y (or x)  Correct method  Both values are correct

Question Number	Suggested Answers	Marks	Notes								
45. (9ME1-46)	<table border="1"> <tr> <td><math>x</math></td><td>-1</td><td>0</td><td>3</td></tr> <tr> <td><math>y</math></td><td>4</td><td>2</td><td>-4</td></tr> </table> 	$x$	-1	0	3	$y$	4	2	-4	1* (45-1)  1 (45-2)  1* (45-3)	<p>Must be all correct</p> <p>In case the data in the above table is incorrect, students can still use the ordered pairs to draw a straight line. The line must pass through (0, 2) and the range of <math>x</math> must include the values from -1 to 3.</p> <p>Correct straight line (include: correct position, use ruler to draw the line, pass through the 3 points and extend two ends of the line)</p> <p>If the data in the table is correct but not complete and the graph is correct, (0, 1, 1) can be given.</p>
$x$	-1	0	3								
$y$	4	2	-4								
46.	$\angle DAE + 80^\circ + 35^\circ = 180^\circ$ ( $\angle$ sum of $\triangle$ ) $\angle DAE = 65^\circ$ $\therefore \angle CDF = \angle DAE = 65^\circ$ $\therefore AB \parallel DF$ (corr. $\angle$ s equal)										
	$\angle EDF + 65^\circ + 35^\circ = 180^\circ$ (adj. $\angle$ s on a st. line) $\angle EDF = 80^\circ$ $\therefore \angle AED = \angle EDF = 80^\circ$ $\therefore AB \parallel DF$ (alt. $\angle$ s equal)										
	Marking Scheme:										
	Case 1	Any correct proof with correct reasons	3								
	Case 2	Any correct proof with poor presentation or without reason(s)	2								
	Case 3	Incomplete proof with any one correct statement and one corresponding reason	1								
	Case 4	Incomplete proof	0								

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47. (9ME1-47)	(Students must find the approximations for the prices of these 3 items.)  The total amount $= 312 + 601 + 121$ $\geq 300 + 600 + 100$ $= 1000$  $\therefore$ Miss Lee can join the lucky draw.	0 0 No evidence of using estimation strategies nor giving reasonable justification	<ul style="list-style-type: none"> <li>Exact calculation only</li> <li>The estimate is given only after exact calculation</li> <li>Use rounding up to estimate the prices</li> </ul>
		1 0 Partial evidence of using estimation strategies, but the solution is incomplete or contains errors	<ul style="list-style-type: none"> <li>One correct approximation only</li> <li>Estimate correctly, but the total amount is omitted</li> <li>Estimate correctly, but the total amount is less than \$1000</li> <li>Correct method used, but minor errors occurred</li> </ul>
		1 1 Estimate with reasonable justification	<ul style="list-style-type: none"> <li>No need to consider unit/presentation</li> <li>Accept using '<math>\approx</math>' instead of '<math>\geq</math>'</li> <li>The conclusion must be correct and aligned with a reasonable explanation</li> </ul>

Question Number	Suggested Answers	Marks	Notes											
48. (9ME1-49)	<p><b>The number of visitors of a country from 2007 to 2011</b></p>  <table><caption>Data for Question 48</caption><tr><th>Year</th><th>Number of visitors (million)</th></tr><tr><td>2007</td><td>13</td></tr><tr><td>2008</td><td>17</td></tr><tr><td>2009</td><td>24</td></tr><tr><td>2010</td><td>22</td></tr><tr><td>2011</td><td>28</td></tr></table>	Year	Number of visitors (million)	2007	13	2008	17	2009	24	2010	22	2011	28	1* (48-1)  
Year	Number of visitors (million)													
2007	13													
2008	17													
2009	24													
2010	22													
2011	28													

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**\*Mark for Answer:**

- (1) The Mark for Answer may be given when there is a correct answer without any work shown.
- (2) If the work shown is incorrect, the Mark for Answer will not be given.
- (3) If the work shown is poorly presented but there is a correct answer, the Mark for Answer may be given.

**\*\*Mark for Presentation:**

- (1) If the work shown is correct but the answer is incorrect, the Mark for Presentation may be given.
- (2) If the work shown is incorrect, the Mark for Presentation will not be given.
- (3) If the numerical value of the answer is correct but not the approximate value as required by the question, the Mark for Presentation will not be given.
- (4) The Mark for Presentation may include overall work such as mathematical expressions, units, written explanations, use of symbols, etc.

r.t.  $xxx$  means “accept answers which can be rounded to  $xxx$ ” .

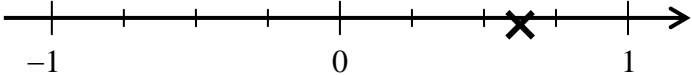

Steps that may be skipped are shown in shade.

Alternative suggested answers are shown in boxes.

## Section A – Sub-paper 4 (9ME4) (1 mark each)

1. D
2. C
3. A
4. C (9ME3-4)
5. A
6. B (9ME1-6)
7. B
8. A
9. B
10. C (9ME2-10)
11. D
12. B
13. D
14. C (9ME3-14)
15. D
16. A (9ME1-16)
17. C
18. D (9ME2-18)
19. A
20. B

## Section B – Sub-paper 4 (9ME4)

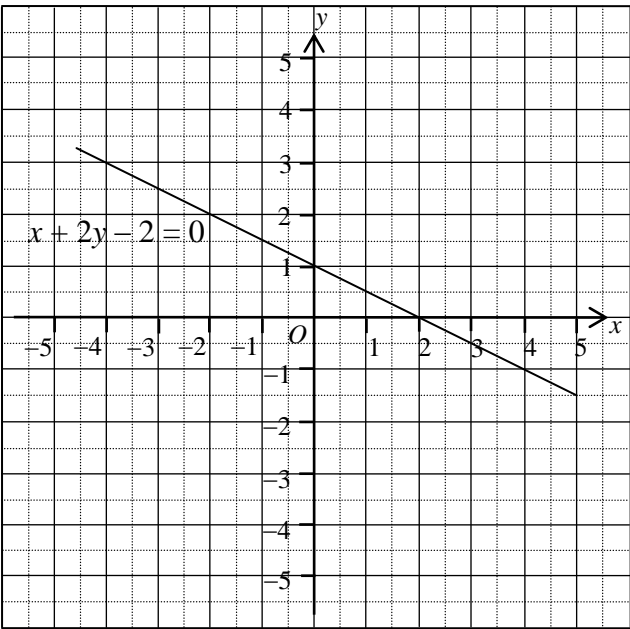
Question Number	Suggested Answers	Marks	Notes
21. (9ME1-21)	(i) <u>0</u> (ii) <u>-4</u>	1	Must be all correct
22. (9ME2-22)	- 6	1	
23.		1	Acceptable range: $0.5 < \frac{5}{8} < 0.75$
24. (9ME3-24)	The machine can produce <u>1080</u> bottles of sauce in one hour.	1	
25.	The coefficient of $y^6$ is <u>-5</u> .	1	
26. (9ME2-26)	$5h + 3k$	1	
27. (9ME1-27)	$2x^2 + 3x + 1$	1	
28. (9ME2-28)	$(x - 5)(x + 1)$	1	
29.	$9y^2 - 1$	1	
30.	$D = \frac{C - 9}{2}$	1	- Putting $D$ on one side - Or equivalent
31. (9ME3-30)	$x < 6$	1	
32.	P, R	1	Must be all correct
33.		1	The cross-section is a rectangle
34. (9ME1-34)	(a) $x = \underline{4}$ (b) $y = \underline{20}$	1 (34a) 1 (34b)	Unit may not be considered
35. (9ME2-35)	$x = \underline{29^\circ}$	1	Unit may not be considered
36.	$\angle EAD$ / $\angle DAE$ / $\angle FBC$ / $\angle CBF$	1	



Question Number	Suggested Answers	Marks	Notes
37. (9ME3-37)	$AC = \underline{4} \text{ cm}$	1	
38. (9ME1-38)	The coordinates of point $P$ are $(\underline{-4}, \underline{-2})$ .	1	Must be all correct and in order
39.	$x = \underline{14.3}$	1	r.t. 14.3
40.	The number of qualified boys is $\underline{6}$ .	1	
41.	The required empirical probability $= \frac{7}{\underline{100}}$	1	Or 0.07

## Section C – Sub-paper 4 (9ME4)

Question Number	Suggested Answers	Marks	Notes
42. (9ME2-43)	Cost price = $1200 + 300$ = \$1500  Loss per cent = $\frac{300}{1500} \times 100\%$ = 20%	1* (42-1)  1 (42-2)  1* (42-3) 1** (42-4)	
43.	Interest = $3500 \times 3\% \times 4$ = \$420  Amount = $3500 + 420$ = \$3920	1 (43-1) 1* (43-2)   1* (43-3) 1** (43-4)	
44.	The present value of the crystal = $700 \times (1 + 10\%)^2$ = \$847	1 (44-1) 1* (44-2) 1** (44-3)	
	$700 \times 1.1 = 770$ $770 \times 1.1 = 847$ The present value of the crystal is \$847.	1 (44-1) 1* (44-2) 1** (44-3)	Correct method (multiply 1.1 two times)
45.	The volume of the pyramid = $\frac{1}{3}(6^2)(12)$ = $144 \text{ cm}^3$	1 (45-1)  1* (45-2) 1** (45-3)	

Question Number	Suggested Answers	Marks	Notes								
46. (9ME2-46)	<table border="1"> <tr> <td><math>x</math></td><td>-4</td><td>2</td><td>4</td></tr> <tr> <td><math>y</math></td><td>3</td><td>0</td><td>-1</td></tr> </table> 	$x$	-4	2	4	$y$	3	0	-1	1* (46-1)  1 (46-2)  1* (46-3)	<p>Must be all correct</p> <p>In case the data in the above table is incorrect, students can still use the ordered pairs to draw a straight line. The line must pass through (2, 0) and the range of <math>y</math> must include the values from -1 to 3.</p> <p>Correct straight line (include: correct position, use ruler to draw the line, pass through the 3 points and extend two ends of the line)</p> <p>If the data in the table is correct but not complete and the graph is correct, (0, 1, 1) can be given.</p>
$x$	-4	2	4								
$y$	3	0	-1								
47.	<p>The mode of a set of data is the datum with the highest frequency, but it does not imply that the number of appearances of the datum must be more than half of the total.</p>	1 (47-1)	Reasonable Explanation								
	<p>Of these 5 tests, Michael got full mark in only 2 of them. Therefore, he did not get full marks in more than half of the tests.</p>	1 (47-1)	Reasonable Explanation								
	<p><math>\therefore</math> Michael's saying <b>is</b> misleading.</p>	1 (47-2)	Reasonable attempt to explain								

Question Number	Suggested Answers	Marks	Notes
48. (9ME2-48)	$\angle BCA + 145^\circ = 180^\circ$ $\angle BCA = 35^\circ$ $\therefore BA = BC$ $\angle BAC = 35^\circ$ $35^\circ + 35^\circ + x = 180^\circ$ $x = 110^\circ$	1 (48-1) 1 (48-2) 1* (48-3) 1** (48-4)	For $\angle BCA = \angle BAC$ Can be absorbed
	$\angle BCA + 145^\circ = 180^\circ$ $\angle BCA = 35^\circ$ $\therefore BA = BC$ $\angle BAC = 35^\circ$ $35^\circ + x = 145^\circ$ $x = 110^\circ$	1 (48-1) 1 (48-2) 1* (48-3) 1** (48-4)	For $\angle BCA = \angle BAC$ Can be absorbed
49. (9ME2-50)	Mean height $= \frac{142 \times 14 + 147 \times 24 + 152 \times 8 + 157 \times 4}{50}$ $= \frac{1988 + 3528 + 1216 + 628}{50}$ $= \frac{7360}{50}$ $= 147.2 \text{ cm}$	1 (49-1)          1* (49-2) 1** (49-3)	