Education Bureau
Territory-wide System Assessment 2019
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.
(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.
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(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 1 (9ME1) (1 mark each)

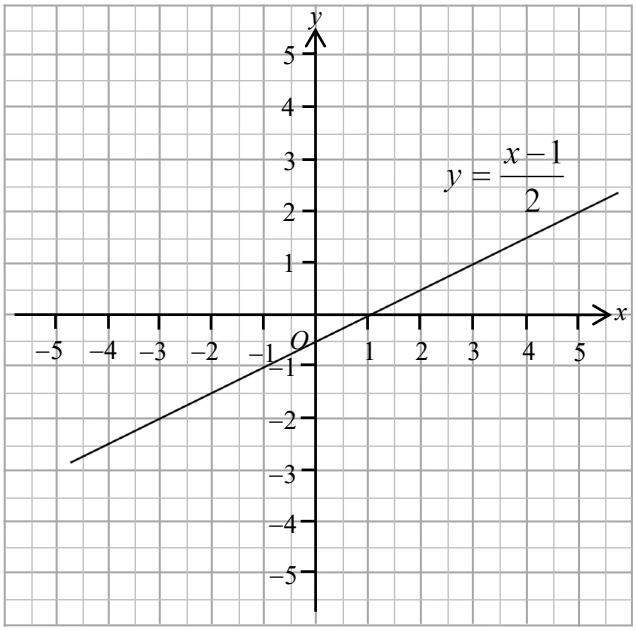
1. A (9ME2-1)
2. A
3. A
4. C
5. A (9ME4-10)
6. B (9ME2-6)
7. C
8. D (9ME4-12)
9. A (9ME4-5)
10. B
11. C
12. C (9ME2-12)
13. C
14. D (9ME4-14)
15. D (9ME2-15)
16. D
17. B
18. B
19. B (9ME2-19)
20. D (9ME4-20)

Section B – Sub-paper 1 (9ME1)

Question Number	Suggested Answers	Marks	Notes
21.	$A = -5$ $B = 0$ $C = 3 / +3$	1	Must be all correct
22.	Diameter = 7×10^{-6} m	1	
23.	Kate's expenditure on food is \$ 1 950 in that month.	1	
24. (9ME2-24)	$m =$ 5	1	
25. (9ME2-25)	The value of the 4^{th} term of the sequence is 15 .	1	
26.	$3y$	1	
27.	$(y + 6)(y - 6)$	1	
28. (9ME4-26)	$x =$ 5	1	
29. (9ME2-29)	approximate solution	1	
30.	$x > 1$	1	
31.	The radius of the circle is 12 cm.	1	
32.	The order of rotational symmetry is 4 .	1	
33.	(a) $x =$ 38 (b) $y =$ 8	1	Must be all correct No need to consider unit
34.	$m =$ 85°	1	No need to consider unit
35. (9ME2-35)	P and R	1	Must be all correct
36.	The coordinates of point C' are (1 , 4).	1	Must be all correct
37.	(i) Discrete data (ii) Continuous data	1	Must be all correct
38. (9ME2-38)	(a) At 10:00 , the upload speed was equal to 5.2 Mbps. (b) At 15:00 , the upload speed decreased most compared to the upload speed of one hour before. (c) The difference of the upload speeds recorded at 12:00 and 13:00 was 1.2 Mbps.	1 (38a) 1 (38b) 1 (38c)	No need to consider unit
39. (9ME4-39)	Mean = 180 Median = 72	1 (39-1) 1 (39-2)	

Section C – Sub-paper 1 (9ME1)

Question Number	Suggested Answers	Marks	Notes
40. (9ME3-40)	Let r % be the annual interest rate. $4\,000 \times r\% \times 2 = 240$ $r = 3$ $\therefore$ The annual interest rate is 3 % .	 1 (40-1) 1* (40-2) 1** (40-3)	
41.	The yearly consumption of plastic bags this year $= 8\,500 \times (1 - 20\%)^2$ $= 5\,440$ $\therefore$ The yearly consumption of plastic bags this year is 5 440. OR $8\,500 \times 0.8 = 6\,800$ $6\,800 \times 0.8 = 5\,440$ The yearly consumption of plastic bags this year is 5 440.	 1 (41-1) 1* (41-2) 1** (41-3) 1 (41-1) 1* (41-2) 1** (41-3)	 Correct method (multiply 0.8 two times)
42. (9ME2-42)	$2y + 10° = y + 40°$ $y = 30°$	1 (42-1) 1* (42-2)	 No need to consider unit
43. (9ME2-43)	$\begin{cases} 2x + y = 11 & ...(1) \\ x = 2y + 3 & ...(2) \end{cases}$ Substitute (2) into (1) $2(2y + 3) + y = 11$ $y = 1$ Substitute $y = 1$ into (2) $x = 2(1) + 3$ $x = 5$	 1 (43-1) 1* (43-2) 1 (43-3) 1* (43-4)	 Correct method (eliminating one of the variables) Correct value of y (or x) Correct method Both values are correct

<table>
<tr><th>Question Number</th><th>Suggested Answers</th><th>Marks</th><th>Notes</th></tr>
<tr><td>44.
(9ME4-44)</td><td>
<table>
<tr><td>x</td><td>–3</td><td>1</td><td>3</td></tr>
<tr><td>y</td><td>–2</td><td>0</td><td>1</td></tr>
</table>


</td><td>1* (44-1)

1 (44-2)

1* (44-3)</td><td>Must be all correct

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 (–3, –2) and the range of x must include the values from –3 to 3.

Correct graph (include: correct position, use ruler to draw the line, pass through the 3 correct points and extend two ends of the line)

If the table is incomplete but no mistakes are found and the graph is correct, (0, 1, 1) can be given.</td></tr>
<tr><td>45.</td><td>$x = 2\pi(9)\left(\frac{150°}{360°}\right)$
≈ 23.561945
= 23.6 cm (corr. to 3 sig. fig.)</td><td>1 (45-1)

1* (45-2)
1** (45-3)</td><td>

r.t. 23.6 cm</td></tr>
<tr><td>46.
(9ME2-46)</td><td>$AB = CB$ (given)
$BD = BE$ (given)
$\angle ABD = \angle CBE$ (vert. opp. $\angle$s)
$\therefore \triangle ABD \cong \triangle CBE$ (SAS)</td><td></td><td>Or other correct proofs</td></tr>
<tr><td></td><td colspan="2">Conditions</td><td></td></tr>
<tr><td></td><td>(1) Any correct proof with correct reasons</td><td>3</td><td></td></tr>
<tr><td></td><td>(2) Any correct proof with poor presentation, missing reasons or inappropriate reasons</td><td>2</td><td></td></tr>
<tr><td></td><td>(3) Incomplete proof with any one correct statement and one corresponding reason</td><td>1</td><td></td></tr>
<tr><td></td><td>(4) Incomplete proof</td><td>0</td><td></td></tr>
</table>

Question Number	Suggested Answers	Marks	Notes
47.	Only 16 of the 50 students got distinction. Therefore, it is not true that more than half of the students (that means 25 students) got distinction in that Mathematics public examination. OR	0 0	◆ Without any reasonable explanation ◆ Conclusion is incorrect
	34 of the 50 students did not get distinction. Therefore, it is not true that more than half of the students (that means 25 students) got distinction in that Mathematics public examination. OR 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.	1 0	◆ Explanation is reasonable but incomplete ◆ Explanation is reasonable but no conclusion is drawn
	∴ I **disagree** on the claim made by the tuition institute.	1 1	◆ Explanation is reasonable and the conclusion is correct

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r.t. *xxx* means "accept answers which can be rounded to *xxx*".

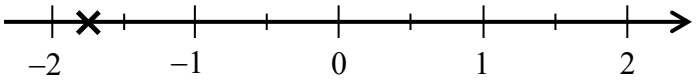
Steps that may be skipped are shown in shade.

Alternative suggested answers are shown in boxes.

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

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

Section B – Sub-paper 2 (9ME2)

Question Number	Suggested Answers	Marks	Notes
21. (9ME3-21)	(i) +70 / 70 dollars represents that the remaining stored value on Mary's Octopus card is 70 dollars. (ii) – 3 dollars represents that the overdraft on John's Octopus card is 3 dollars.	1	Must be all correct
22.	0.018 7	1	
23.		1	Acceptable range: Between – 2 and – 1.5
24. (9ME1-24)	$m =$ 5	1	
25. (9ME1-25)	The value of the 4^{th} term of the sequence is 15 .	1	
26.	$3x^2 - 2x - 8$	1	
27.	$(x - 5)^2$ / $(x - 5)(x - 5)$	1	
28.	$\frac{1}{12f}$	1	
29. (9ME1-29)	approximate solution	1	
30. (9ME3-30)	$\frac{4}{21} < \frac{5}{19}$	1	
31.	The volume of the pyramid is 252 cm^3.	1	
32.	P and Q	1	Must be all correct
33.	(a) $m =$ 19 (b) $n =$ 68	1	Must be all correct No need to consider unit
34.	$x =$ 40°	1	No need to consider unit
35. (9ME1-35)	P and R	1	Must be all correct
36.	$x =$ 16.6	1	r.t. 16.6 No need to consider unit

<table>
<tr><th>Question Number</th><th>Suggested Answers</th><th>Marks</th><th>Notes</th></tr>
<tr><td>37.
(9ME4-37)</td><td>
<table>
<tr><th colspan="2">Table 1</th></tr>
<tr><th>Number of exercise books</th><th>Frequency</th></tr>
<tr><td>4 – 6</td><td>3</td></tr>
<tr><td>7 – 9</td><td>7</td></tr>
<tr><td>10 – 12</td><td>5</td></tr>
</table>
<table>
<tr><th colspan="2">Table 2</th></tr>
<tr><th>Number of exercise books</th><th>Frequency</th></tr>
<tr><td>4 – 5</td><td>2</td></tr>
<tr><td>6 – 7</td><td>5</td></tr>
<tr><td>8 – 9</td><td>3</td></tr>
<tr><td>10 – 11</td><td>3</td></tr>
<tr><td>12 – 13</td><td>2</td></tr>
</table>
</td><td>1* (37-1)

1* (37-2)</td><td>Must be all correct

Must be all correct</td></tr>
<tr><td>38.
(9ME1-38)</td><td>(d) At <u>10:00</u> , the upload speed was equal to 5.2 Mbps.
(e) At <u>15:00</u> , the upload speed decreased most compared to the upload speed of one hour before.
(f) The difference of the upload speeds recorded at 12:00 and 13:00 was <u>1.2</u> Mbps.</td><td>1 (38a)
1 (38b)
1 (38c)</td><td>No need to consider unit</td></tr>
<tr><td>39.</td><td>The modal class of the number of departures from Hong Kong is <u>0</u> time(s) – <u>4</u> time(s).</td><td>1</td><td>Must be all correct</td></tr>
</table>

Section C – Sub-paper 2 (9ME2)

Question Number	Suggested Answers	Marks	Notes
40.	Selling price = \$6 500 × (1 – 12%) = \$5 720	1 (40-1) 1* (40-2) 1** (40-3)	
41.	(a) $(a^4)^3$ $= a^{12}$ (b) $\frac{a^{-6}}{(a^4)^3}$ $= \frac{a^{-6}}{a^{12}}$ $= \frac{1}{a^{12-(-6)}}$ $= \frac{1}{a^{18}}$	1* (41a) 1 (41b1) 1* (41b2)	Using $\frac{x^{-m}}{x^n} = \frac{1}{x^{n-(-m)}}$ Correct answer (getting marks 1 1)
42. (9ME1-42)	$2y + 10° = y + 40°$ $y = 30°$	1 (42-1) 1* (42-2)	No need to consider unit
43. (9ME1-43)	$\begin{cases} 2x + y = 11 & ...(1) \\ x = 2y + 3 & ...(2) \end{cases}$ Substitute (2) into (1) $2(2y + 3) + y = 11$ $y = 1$ Substitute $y = 1$ into (2) $x = 2(1) + 3$ $x = 5$	1 (43-1) 1* (43-2) 1 (43-3) 1* (43-4)	Correct method (eliminating one of the variables) Correct value of y (or x) Correct method Both values are correct

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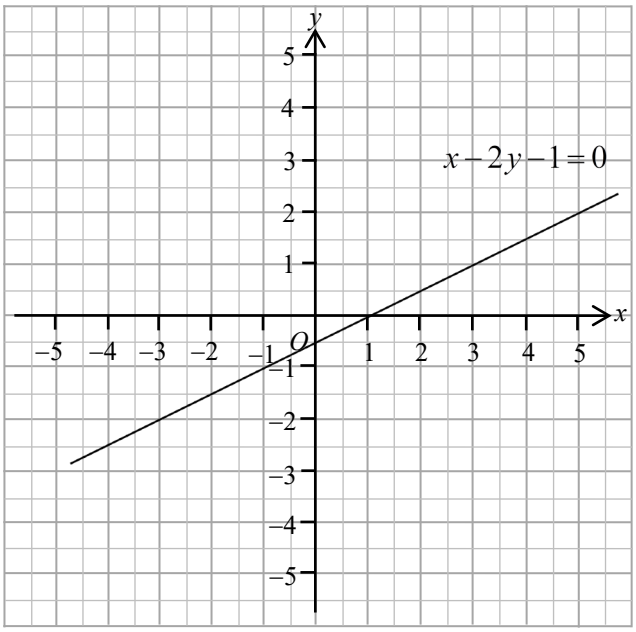

</td><td>1* (44-1)

1 (44-2)

1* (44-3)</td><td>Must be all correct

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Correct graph (include: correct position, use ruler to draw the line, pass through the 3 correct points and extend two ends of the line)

If the table is incomplete but no mistakes are found and the graph is correct, (0, 1, 1) can be given.</td></tr>
<tr><td>45.</td><td>The area of the sector
$= \pi \times 5^2 \times \frac{100°}{360°}$
≈ 21.816616
$= 21.8$ cm^2 (corr. to 3 sig. fig.)</td><td>1 (45-1)

1* (45-2)
1** (45-3)</td><td></td></tr>
<tr><td>46.
(9ME1-46)</td><td>$AB = CB$ (given)
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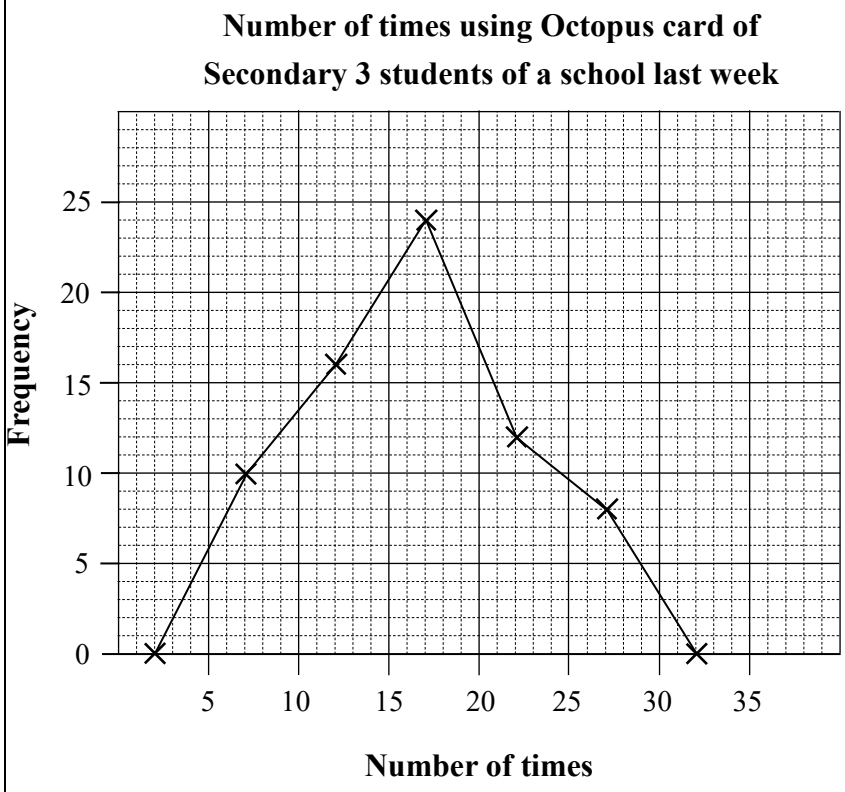
47.		1* (47-1) 1* (47-2)	For the correct indication of all 4 marks Correct frequency polygon (including the points connected by line segments, no marks will be given if any charts other than the frequency polygon is shown)

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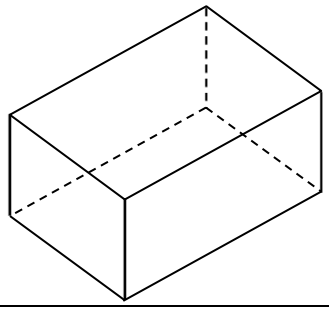
Alternative suggested answers are shown in boxes.

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

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

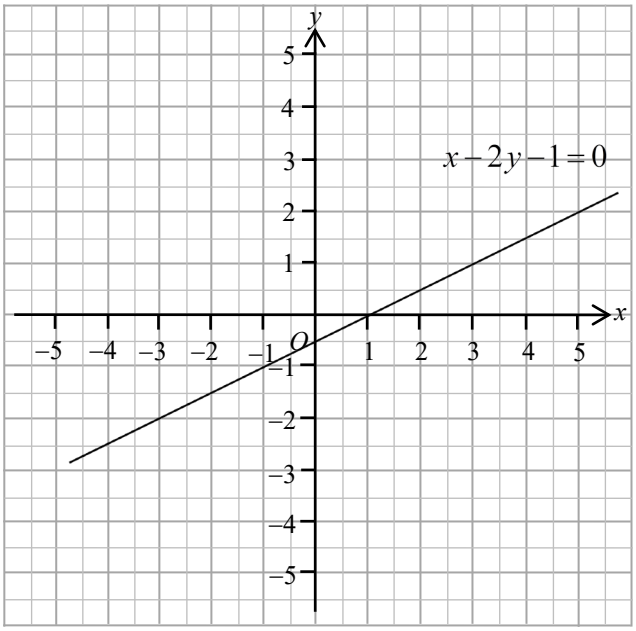
Section B – Sub-paper 3 (9ME3)

Question Number	Suggested Answers	Marks	Notes
21. (9ME2-21)	(i) +70 / 70 dollars represents that the remaining stored value on Mary's Octopus card is 70 dollars. (ii) – 3 dollars represents that the overdraft on John's Octopus card is 3 dollars.	1	Must be all correct
22.	18.21	1	
23. (9ME4-23)	There are 11 positive integers less than $\sqrt{142}$.	1	
24.	$x =$ 1 $y =$ – 6	1	Must be all correct
25.	$3y^2 - 2y$	1	
26.	$49 - 14y + y^2$	1	
27.	$(x + 12)(x + 1)$	1	
28.		1	
29. (9ME4-29)	$s =$ – 25	1	
30. (9ME2-30)	$\frac{4}{21} < \frac{5}{19}$	1	
31.	$x =$ 35°	1	No need to consider unit
32.	$\angle CFB$ / $\angle BFC$ / $\angle AED$ / $\angle DEA$	1	
33.	$x =$ 8	1	
34.	The coordinates of point $\boldsymbol{Q}$ are (–2 , 3).	1	Must be all correct
35.	$ST =$ 13 units	1	
36.	(2) → (4) → (1) → (3)	1	

Question Number	Suggested Answers	Marks	Notes
37.	The weighted mean mark of Kitty is 74.6 .	1	
38. (9ME4-38)	(a) There are 15 students in 3A. (b) The student getting the highest mark spends 1 hour(s) on video games per week on average. (c) There are 5 students spending more than 10 hours on video games per week on average.	1 (38a) 1 (38b) 1 (38c)	
39.	The required empirical probability = $\frac{67}{100}$	1	Or 0.67

Section C – Sub-paper 3 (9ME3)

Question Number	Suggested Answers	Marks	Notes
40. (9ME1-40)	Let r % be the annual interest rate. $4\,000 \times r\% \times 2 = 240$ $r = 3$ $\therefore$ The annual interest rate is 3 % .	1 (40-1) 1* (40-2) 1** (40-3)	
41.	The volume of the prism $= \frac{8 \times 6}{2} \times 10$ $= 240\ \text{cm}^3$	1 (41-1) 1* (41-2) 1** (41-3)	
42.	$\tan \angle QPR = \frac{QR}{PR}$ $\tan 32° = \frac{QR}{25}$ $QR \approx 15.6217338$ $QR = 15.6$ (Correct to 3 sig. fig.) $\therefore$ The height of the tree is 15.6 m.	1 (42-1) 1* (42-2) 1** (42-3)	r.t. 15.6
43.	The amount Fred should receive $= 360 \times 11$ = 3 960 Hong Kong dollars	1 (43-1) 1* (43-2) 1** (43-3)	

44. (9ME2-44)	<table><tr><td>x</td><td>–3</td><td>1</td><td>3</td></tr><tr><td>y</td><td>–2</td><td>0</td><td>1</td></tr></table> 	1* 1 1*	Must be all correct 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 (–3, –2) and the range of x must include the values from –3 to 3. Correct graph (include: correct position, use ruler to draw the line, pass through the 3 correct points and extend two ends of the line) If the table is incomplete but no mistakes are found and the graph is correct, (0, 1, 1) can be given.

<table>
<tr><th>Question Number</th><th>Suggested Answers</th><th>Marks</th><th>Notes</th></tr>
<tr><td rowspan="3">45.</td><td rowspan="3">The height of the wall is approximately 1.5 times the length of the poster, while the width is approximately 4 times the width of the poster.
∴ The area of the wall
≈ (6 × 1.5 × 3 × 4) m^2
= 108 m^2</td><td>0 0 No evidence of using estimation strategies nor giving reasonable justification</td><td>◆ Answer only, without any working steps or written explanation
◆ The explanation is irrelevant or unreasonable</td></tr>
<tr><td>1 0 Partial evidence of using estimation strategies, but the solution is incomplete or contains mistakes</td><td>◆ Using reasonable estimation strategies in finding areas, but the solution is incomplete. For instance, only the height of the wall is estimated about 1.5 times the length of the poster during the calculation in finding the area
◆ The explanation is reasonable, but the answer is outside the acceptable range
◆ The explanation is reasonable, but calculation mistakes occurred</td></tr>
<tr><td>1 1 Estimate with reasonable justification</td><td>◆ The answer must be supported by reasonable explanation and within the acceptable range
◆ Accept the height of the wall be 1.5 times to 2 times the length of the poster, the width be 3 times to 4 times of the width of the poster
◆ Acceptable range of the area of the wall: 81 m^2 to 144 m^2</td></tr>
<tr><td rowspan="6">46.
(9ME4-43)</td><td colspan="2">∠CBE + 110° = 180° (adj. ∠s on st. line)
∠ CBE = 70°
∠ FEG = 70° (given)
∴ ∠ CBE = ∠ FEG
∴ AC // DF (corr. ∠s equal)</td><td>Or other correct proofs</td></tr>
<tr><td colspan="2">Conditions</td><td></td></tr>
<tr><td>(1) Any correct proof with correct reasons</td><td>3</td><td rowspan="4"></td></tr>
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</table>

<table>
<tr><th>Question Number</th><th>Suggested Answers</th><th>Marks</th><th>Notes</th></tr>
<tr><td>47.</td><td>(a)
<table><tr><td>Weight (kg)</td><td>46 – 50</td><td>51 – 55</td><td>56 – 60</td><td>61 – 65</td></tr><tr><td>Class mark (kg)</td><td>48</td><td>53</td><td>58</td><td>63</td></tr><tr><td>Frequency</td><td>5</td><td>13</td><td>10</td><td>2</td></tr></table>
(b) The mean = $\frac{48\times5+53\times13+58\times10+63\times2}{30}$
= 54.5kg</td><td>1* (47a)

1 (47b1)

1* (47b2)
1** (47b3)</td><td>Must be all correct

Correct method</td></tr>
</table>

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

Section B – Sub-paper 4 (9ME4)

Question Number	Suggested Answers	Marks	Notes
21.	-7	1	
22.	The constant of the polynomial is $+7$.	1	
23. (9ME3-23)	There are 11 positive integers less than $\sqrt{142}$.	1	
24.	$n + 2$	1	
25.	$x^2 - 4xy + 3x$	1	
26. (9ME1-28)	$x =$ 5	1	
27.	$W = 3(G + 4)$	1	
28.	$(x + y)(k + 3)$	1	
29. (9ME3-29)	$s =$ -25	1	
30.	$x > -11$	1	
31.	Figure A : 4 Figure B : 1	1	Must be all correct
32.	(a) $\triangle ABC \sim \triangle PQR$ (b) Ratio of 2 sides, included angle	1	Must be all correct
33.	$x =$ $125°$	1	No need to consider unit
34.	HE / EH	1	
35.	The polar coordinates of point $\boldsymbol{P}$ are (1 , $210°$).	1	Must be all correct and in order
36.	$\theta =$ $44.1°$	1	r.t. $44.1°$ No need to consider unit

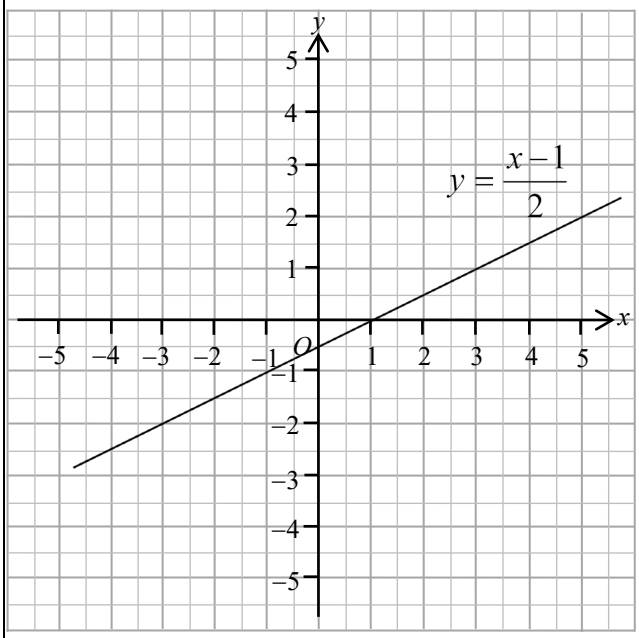
<table>
<tr><th>Question Number</th><th>Suggested Answers</th><th>Marks</th><th>Notes</th></tr>
<tr><td>37. (9ME2-37)</td><td>
<table>
<tr><th colspan="2">Table 1</th></tr>
<tr><th>Number of exercise books</th><th>Frequency</th></tr>
<tr><td>4 – 6</td><td>3</td></tr>
<tr><td>7 – 9</td><td>7</td></tr>
<tr><td>10 – 12</td><td>5</td></tr>
</table>
<table>
<tr><th colspan="2">Table 2</th></tr>
<tr><th>Number of exercise books</th><th>Frequency</th></tr>
<tr><td>4 – 5</td><td>2</td></tr>
<tr><td>6 – 7</td><td>5</td></tr>
<tr><td>8 – 9</td><td>3</td></tr>
<tr><td>10 – 11</td><td>3</td></tr>
<tr><td>12 – 13</td><td>2</td></tr>
</table>
</td><td>1* (37-1)

1* (37-2)</td><td>Must be all correct

Must be all correct</td></tr>
<tr><td>38. (9ME3-38)</td><td>(a) There are <u>15</u> students in 3A.
(b) The student getting the highest mark spends <u>1</u> hour(s) on video games per week on average.
(c) There are <u>5</u> students spending more than 10 hours on video games per week on average.</td><td>1 (38a)
1 (38b)
1 (38c)</td><td></td></tr>
<tr><td>39. (9ME1-39)</td><td>Mean = <u>180</u>
Median = <u>72</u></td><td>1 (39-1)
1 (39-2)</td><td></td></tr>
</table>

Section C – Sub-paper 4 (9ME4)

Question Number	Suggested Answers	Marks	Notes
40.	The amount = \$50 000 × $(1 + 2\%)^3$ = \$53 060	1 (40-1) 1* (40-2) 1** (40-3)	r.t. \$53 060
41.	$AB^2 = AP^2 + PB^2$ $= 5.2^2 + 3.9^2$ $= 42.25$ $AB = 6.5$ km	1 (41-1) 1* (41-2) 1** (41-3)	
42.	The area of the trapezium $= \frac{[(7-4)+(8-1)]\times(6-2)}{2}$ = 20 sq. units	1 (42-1) 1* (42-2) 1** (42-3)	Or other correct methods
43. (9ME3-46)	$\angle CBE + 110° = 180°$ (adj. ∠s on st. line) $\angle CBE = 70°$ $\angle FEG = 70°$ (given) $\therefore \angle CBE = \angle FEG$ $\therefore AC // DF$ (corr. ∠s equal)		Or other correct proofs
	Conditions		
	(1) Any correct proof with correct reasons	3	
	(2) Any correct proof with poor presentation, missing reasons or inappropriate reasons	2	
	(3) Incomplete proof with any one correct statement and one corresponding reason	1	
	(4) Incomplete proof	0	

<table>
<tr><th>Question Number</th><th>Suggested Answers</th><th>Marks</th><th>Notes</th></tr>
<tr><td>44.
(9ME1-44)</td><td>
<table>
<tr><td>x</td><td>–3</td><td>1</td><td>3</td></tr>
<tr><td>y</td><td>–2</td><td>0</td><td>1</td></tr>
</table>


</td><td>1* (44-1)

1 (44-2)

1* (44-3)</td><td>Must be all correct

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 (–3, –2) and the range of x must include the values from –3 to 3.

Correct graph (include: correct position, use ruler to draw the line, pass through the 3 correct points and extend two ends of the line)

If the table is incomplete but no mistakes are found and the graph is correct, (0, 1, 1) can be given.</td></tr>
<tr><td>45.</td><td>The total amount paid by Miss Chan
= 256 + 102 + 201
> 200 + 100 + 200
= 500

∴ Miss Chan can get the discount.</td><td>0 0 No evidence of using estimation strategies nor giving reasonable justification</td><td>◆ Exact calculation only
◆ The estimate is given only after exact calculation
◆ Use wrong methods to get the approximation for the price of each of the items</td></tr>
<tr><td></td><td></td><td>1 0 Partial evidence of using estimation strategies, but the solution is incomplete or contains errors</td><td>◆ Approximate the price of each of the items correctly, but the total amount paid by Miss Chan is omitted or wrongly estimated
◆ Estimate the total amount paid by Miss Chan correctly, but the conclusion is omitted or wrong
◆ Correct method used, but errors occurred</td></tr>
<tr><td></td><td></td><td>1 1 Estimate with reasonable justification</td><td>◆ No need to consider unit/presentation
◆ The conclusion must be correct and aligned with a reasonable explanation</td></tr>
</table>

<table>
<tr><th>Question Number</th><th>Suggested Answers</th><th>Marks</th><th>Notes</th></tr>
<tr><td>46.</td><td>The curved surface area of the cone
$= \pi(8)(17)$
$= 136\pi\,\text{cm}^2$</td><td>1 (46-1)
1* (46-2)
1** (46-3)</td><td></td></tr>
<tr><td>47.</td><td>(a)
Drink
Set Lunch
<table><tr><th></th><th>X</th><th>Y</th><th>Z</th></tr><tr><td>A</td><td>AX / XA</td><td>AY</td><td>AZ</td></tr><tr><td>B</td><td>BX</td><td>BY</td><td>BZ / ZB</td></tr><tr><td>C</td><td>CX</td><td>CY / YC</td><td>CZ</td></tr></table>
(b) The probability that Rosa chooses set A and drink Y
$= \frac{1}{9}$</td><td>1* (47a)

1* (47b)</td><td>Must be all correct

Or 0.111</td></tr>
</table>