Education Bureau
Territory-wide System Assessment 2025
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 1 (9ME1) (1 mark each)

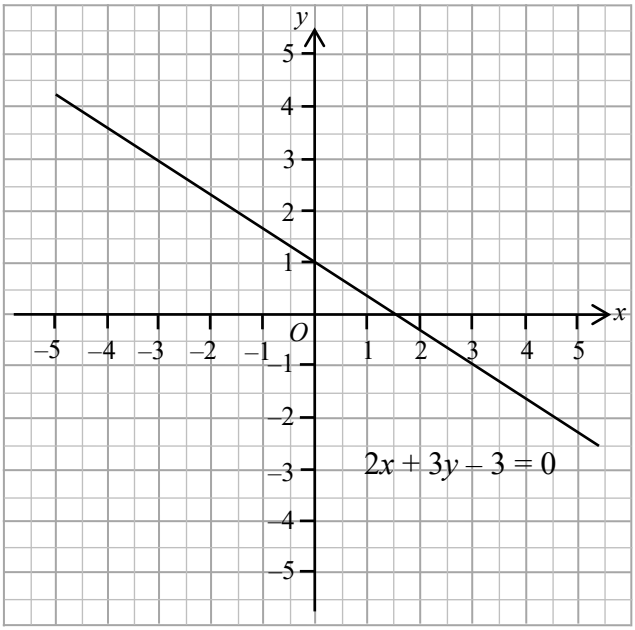
1. D (9ME4-1)
2. C (9ME4-2)
3. C
4. A (9ME2-5)
5. A (9ME4-4)
6. B (9ME4-5)
7. A (9ME4-7)
8. D
9. D
10. B (9ME2-11)
11. B (9ME4-12)
12. B
13. C (9ME2-13)
14. D (9ME2-14)
15. D (9ME2-16)
16. B
17. A
18. B (9ME2-18)
19. C (9ME4-19)
20. C (9ME2-20)

Section B – Sub-paper 1 (9ME1)

Question Number	Suggested Answers	Marks	Notes
21.	200	1	
22.	$A = -4$ $B = -1$ $C = 3$ / $+3$	1	Must be all correct
23.	The percentage increase in the number of scholarship applicants for the secondary school this year is 25% / +25%.	1	
24. (9ME2-23)	(i) Inverse proportion (ii) Direct proportion	1	Must be all correct
25. (9ME4-25)	Number of basketballs : Number of footballs : Number of volleyballs = 6 : 7 : 5	1	
26. (9ME2-26)	5.6×10^{-4}	1	
27. (9ME4-28)	$2x^2 - x - 3$	1	
28.	$(3x - 2)(x + 5)$	1	
29. (9ME4-29)	$(7x + 1)(7x - 1)$	1	
30. (9ME4-30)	$h = \frac{1}{6}$	1	r.t. 0.167
31. (9ME4-31)	$x \geq -5$	1	
32.	Solid A and Solid C	1	Must be all correct
33.	$ABCDE$	1	
34.	(a) $x =$ 86 (b) $y =$ 15	1	Must be all correct No need to consider unit
35.	F	1	
36. (9ME2-35)	$x =$ 30°	1	No need to consider unit

Question Number	Suggested Answers	Marks	Notes
37. (9ME4-37)	(a) The fast-food chain has 18 branches. (b) The highest-selling branch of the fast-food chain sold 95 hamburgers. (c) The mode of the sale of hamburgers at each branch of the fast-food chain yesterday was 60 .	1 (37a) 1 (37b) 1 (37c)	No need to consider unit
38. (9ME2-39)	(a) There were 40 participants in the race. (b) 33 participants got a medal in the race.	1 (38a) 1 (38b)	
39.	The weighted mean score of Johnson is 64 .	1	

Section C – Sub-paper 1 (9ME1)

<table>
<tr><th>Question Number</th><th>Suggested Answers</th><th>Marks</th><th>Notes</th></tr>
<tr><td>40.</td><td>The amount
= $54 000 × (1 + 4% × 5)
= $64 800</td><td>1 (40-1)
1* (40-2)
1** (40-3)</td><td></td></tr>
<tr><td>41.
(9ME4-42)</td><td><table><tr><td>x</td><td>– 3</td><td>0</td><td>3</td></tr><tr><td>y</td><td>3</td><td>1</td><td>– 1</td></tr></table>
 
</td><td>1* (41-1)

1 (41-2)

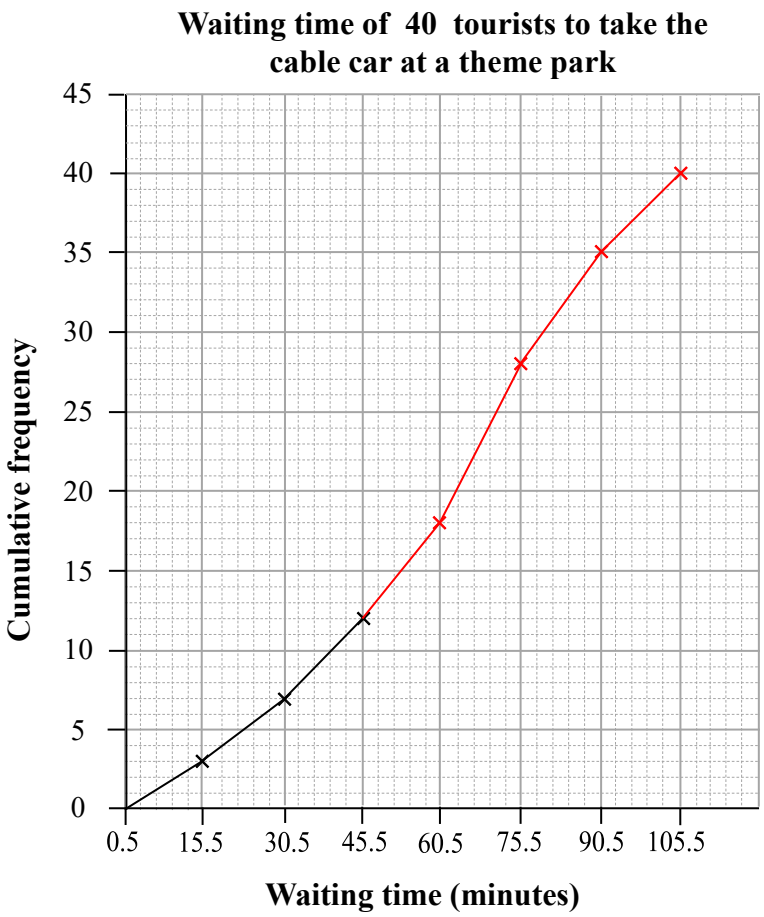
1* (41-3)</td><td>Must be all correct

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 (0, 1) 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>
</table>

Question Number	Suggested Answers	Marks	Notes
42.	(a) $x^5 \cdot x^{-2}$ $= x^{5+(-2)}$ $= x^3$	1* (42a)	
	(b) $x^5(x^{-1}y)^2$ $= x^5 \cdot x^{-1\times 2}y^2$ $= x^3y^2$	1 (42b1) 1* (42b2)	using $(ab)^n = a^n b^n$ Correct answer (getting marks 1 1)
43.	$x = 2\pi(10)\left(\frac{250°}{360°}\right)$ $\approx$ 43.633 23 = 43.6 cm (corr. to 3 sig. fig.)	1 (43-1) 1* (43-2) 1** (43-3)	r.t. 43.6 cm
44. (9ME2-43)	Let the total surface area of Solid B be x cm^2. $\frac{x}{3\,600} = \left(\frac{1}{2}\right)^2$ $x = 900$ $\therefore$ The total surface area of Solid B is 900 cm^2.	1 (44-1) 1* (44-2) 1** (44-3)	
45.	$\angle BAC = 67° + 33°$ $= 100°$ $\angle BAC + \angle DCA$ $= 100° + 80°$ $= 180°$ $\therefore AB // CD$ (int. $\angle$s supp.)		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>46.</td><td>(a)
<table>
<tr><td>Waiting time less than (minutes)</td><td>15.5</td><td>30.5</td><td>45.5</td><td>60.5</td><td>75.5</td><td>90.5</td><td>105.5</td></tr>
<tr><td>Cumulative frequency</td><td>3</td><td>7</td><td>12</td><td>18</td><td>28</td><td>35</td><td>40</td></tr>
</table>
(b)
 
</td><td>1*
(46a)

1*
(46b1)

1*
(46b2)</td><td>Must be all correct

The remaining 4 points are correctly indicated.

Correct cumulative frequency polygon (including correct indication of all 4 points and the points are connected by line segments)</td></tr>
</table>

Question Number	Suggested Answers	Marks	Notes
47.	Total number of gifts = 8 The number of gifts priced at \$100 = 3 < 4 $\therefore$ It is not true that over half of the prices of gifts is \$100. $\therefore$ I **disagree** with the chairperson's claim.	0 0	◆ Without any reasonable explanation ◆ Conclusion is incorrect
		1 0	◆ Explanation is reasonable but incomplete ◆ Explanation is reasonable but no conclusion is drawn
		1 1	◆ Explanation supported by data is reasonable and the conclusion is correct