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% (i) Inverse proportion	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)	$x \ge -5$	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)	$x = \underline{30^{\circ}}$	1	No need to consider unit

Question Number	Suggested Answers	Marks	Notes
37. (9ME4-37)	(a) The fast-food chain has 18 branches.	1 (37a)	
	(b) The highest-selling branch of the fast-food chain		
	sold <u>95</u> hamburgers.	1 (37b)	No need to
	(c) The mode of the sale of hamburgers at each branch of the		consider unit
	fast-food chain yesterday was60	1 (37c)	
38. (9ME2-39)	(a) There were40 participants in the race.	1 (38a)	
	(b) participants got a medal in the race.	1 (38b)	
39.	The weighted mean score of Johnson is64	1	

Section C - Sub-paper 1 (9ME1)

Question Number	Suggested Answers	Marks	Notes
40.	The amount		
	$= $54\ 000 \times (1 + 4\% \times 5)$	1 (40-1)	
	= \$64 800	1* (40-2)	
		1** (40-3)	
41. (9ME4-42)	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1* (41-1)	Must be all correct
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1 (41-2) 1* (41-3)	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.

Question			
Number	Suggested Answers	Marks	Notes
42.	(a) $x^5 \cdot x^{-2}$ = $x^{5+(-2)}$ = x^3	1* (42a)	
	(b) $x^{5}(x^{-1}y)^{2}$ = $x^{5} \cdot x^{-1 \times 2}y^{2}$ = $x^{3}y^{2}$	1 (42b1) 1* (42b2)	using $(ab)^n = a^n b^n$ Correct answer (getting marks 1 1)
43.	$x = 2\pi (10) \left(\frac{250^{\circ}}{360^{\circ}} \right)$ $\approx 43.633 \ 23$ $= 43.6 \ \text{cm (corr. to 3 sig. fig.)}$	1 (43-1) 1* (43-2) 1** (43-3)	r.t. 43.6 cm
44. (9ME2-43)	Let the total surface area of Solid <i>B</i> be $x \text{ cm}^2$. $\frac{x}{3600} = \left(\frac{1}{2}\right)^2$ $x = 900$ $\therefore \text{ The total surface area of Solid } B \text{ is } 900 \text{ cm}^2.$	1 (44-1) 1* (44-2) 1** (44-3)	
45.	$ ∠BAC = 67^{\circ} + 33^{\circ} $ $= 100^{\circ} $ $∠BAC + ∠DCA $ $= 100^{\circ} + 80^{\circ} $ $= 180^{\circ} $ $∴ AB // CD $	3 2	Or other correct proofs
	missing reasons or inappropriate reasons (3) Incomplete proof with any one correct statement and one corresponding reason (4) Incomplete proof	1 0	

Suggested Answers						Marks	Notes		
(a)									
Waiting time less than (minutes)	15.5	30.5	45.5	60.5	75.5	90.5	105.5	1* (46a)	Must be all correct
Cumulative frequency	3	7	12	18	28	35	40		
(b) 45 40 35 30 25 15 10 5 0 0.5	Waitin	30.5 45	5.5 60.5	theme p	90.5 10	*		1* (46b1) 1* (46b2)	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)
	Waiting time less than (minutes) Cumulative frequency b) 45 40 35 30 25 30 15 10 5	Waiting time less than (minutes) Cumulative frequency b) Waitin 45 40 35 30 30 25 30 15 10 5 0 0.5 15.5	Waiting time less than (minutes) Cumulative frequency b) Waiting time cable contained the containe	Waiting time less than (minutes) Cumulative frequency By the street of	Waiting time less than (minutes) Cumulative frequency Waiting time of 40 tourists cable car at a theme p 45 40 35 30 30 30 30 30 30 30 30 3	Waiting time less than (minutes) Cumulative frequency By the street of	Waiting time less than (minutes) Cumulative frequency Waiting time of 40 tourists to take the cable car at a theme park 45 40 35 30 45.5 60.5 75.5 90.5 Waiting time of 40 tourists to take the cable car at a theme park 45 40 35 40 30 45 40 35 40 40 50 40 50 60 60 75 75 90	Waiting time less than (minutes) Cumulative frequency B) Waiting time of 40 tourists to take the cable car at a theme park 45 40 35 45.5 60.5 75.5 90.5 105.5 40 105.5	Waiting time less than (minutes)

Question Number	Suggested Answers	Marks	Notes	
47.	Total number of gifts = 8 The number of gifts priced at \$100 = 3 <4 ∴ It is not true that over half of the prices of gifts is \$100.	0 0	 Without any reasonable explanation Conclusion is incorrect 	
	∴ It is not true that over half of the prices of gifts is \$100. ∴ I disagree with the chairperson's claim.	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	