

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” .

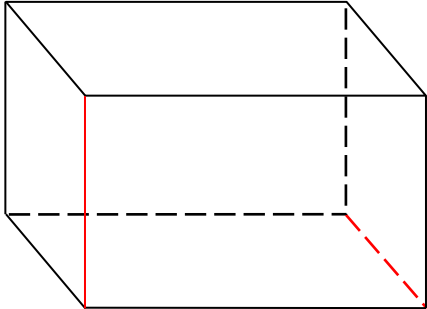
Steps that may be skipped are shown in **shade**.

Alternative suggested answers are shown in **boxes**.

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

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

Section B – Sub-paper 2 (9ME2)

Question Number	Suggested Answers	Marks	Notes
21.	11	1	
22. (9ME3-22)	0.034 6	1	
23. (9ME1-24)	(i) Inverse proportion (ii) Direct proportion	1	Must be all correct
24.	$x = \underline{\quad 2 \quad}$	1	
25.	$-\frac{1}{5} \quad / \quad -0.2$	1	
26. (9ME1-26)	5.6×10^{-4}	1	
27.	$4a + 5b \quad / \quad 5b + 4a$	1	
28.	$(2x - y)(3a - 5)$	1	
29. (9ME3-27)	$4x^2 + 4x + 1$	1	
30. (9ME3-28)	$\frac{2}{hk}$	1	
31.	The maximum absolute error of the measurement is $\underline{\quad 25 \text{ mL} \quad}$.	1	No need to consider unit
32.		1	Must be all correct
33.	$x = \underline{\quad 50^\circ \quad}$	1	No need to consider unit
34.	(a) $x = \underline{\quad 1 \quad}$ (b) $y = \underline{\quad 65 \quad}$	1	Must be all correct No need to consider unit
35. (9ME1-36)	$x = \underline{\quad 30^\circ \quad}$	1	No need to consider unit
36.	$\theta = \underline{\quad 26.6^\circ \quad}$	1	r.t. 26.6° No need to consider unit

[illegible]

Section C – Sub-paper 2 (9ME2)

Question Number	Suggested Answers	Marks	Notes
40.	The tuition fee after two years $= \$50\,000 \times (1 + 6\%)^2$ $= \$56\,180$ or $\boxed{50\,000 \times 1.06 = 53\,000}$ $\boxed{53\,000 \times 1.06 = 56\,180}$ $\boxed{\text{The tuition fee after two years is \$56 180.}}$	1 (40-1) 1* (40-2) 1** (40-3) $\boxed{1}$ (40-1) $\boxed{1^*}$ (40-2) $\boxed{1^{**}}$ (40-3)	r.t. \$56 200 $\boxed{\text{Correct method (multiply 1.06 twice)}}$ $\boxed{\text{r.t. \\$56 200}}$
41.	The average fee for each person is $= \frac{5 \times 280}{8}$ $= \$175$	1 (41-1) 1* (41-2) 1** (41-3)	
42. (9ME3-46)	$\begin{cases} 2x - 3y = 7 & \dots(1) \\ x + 3y = 8 & \dots(2) \end{cases}$ (1) + (2) , $3x = 15$ $x = 5$ Substitute $x = 5$ into (2), $5 + 3y = 8$ $y = 1$	1 (42-1) 1* (42-2) 1 (42-3) 1* (42-4)	Correct method (eliminating one of the variables) Correct value of x (or y) Correct method Both values are correct

Question Number	Suggested Answers	Marks	Notes
43. (9ME1-44)	Let the total surface area of Solid B be $x \text{ cm}^2$. $\frac{x}{3600} = \left(\frac{1}{2}\right)^2$ $x = 900$ $\therefore$ The total surface area of Solid B is 900 cm^2 .	1 (43-1) 1* (43-2) 1** (43-3)	
44. (9ME3-45)	The area of polygon $ABCDEFGH$ $= (9 - 1) \times (4 - 2) + (7 - 3) \times (2 - (-4))$ $= 40 \text{ sq. units}$	1 (44-1) 1* (44-2) 1** (44-3)	Or other correct methods
45.	$\angle ABC = 180^\circ - 89^\circ - 43^\circ$ (adj. $\angle$ s on st. line) $= 48^\circ$ $\angle ACB = 180^\circ - 66^\circ - 48^\circ$ ($\angle$ sum of Δ) $= 66^\circ$ $\therefore \angle ACB = \angle BAC = 66^\circ$ $\therefore AB = BC$ (sides opp. eq. $\angle$ s) $\therefore \triangle ABC$ is an isosceles triangle		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 without any correct statements	0	
46.	$(6x + 4^\circ) + x + (4x - 22^\circ) = 180^\circ$ $x = 18^\circ$	1 (46-1) 1* (46-2)	No need to consider unit

Question Number	Suggested Answers	Marks	Notes																												
47.	<table border="1"> <thead> <tr> <th>Height (cm)</th><th>Class boundaries (cm)</th><th>Class mark (cm)</th><th>Frequency</th></tr> </thead> <tbody> <tr> <td>150 – 154</td><td>149.5 – 154.5</td><td>152</td><td>2</td></tr> <tr> <td>155 – 159</td><td>154.5 – 159.5</td><td>157</td><td>3</td></tr> <tr> <td>160 – 164</td><td>159.5 – 164.5</td><td>162</td><td>4</td></tr> <tr> <td>165 – 169</td><td>164.5 – 169.5</td><td>167</td><td>4</td></tr> <tr> <td>170 – 174</td><td>169.5 – 174.5</td><td>172</td><td>5</td></tr> <tr> <td>175 – 179</td><td>174.5 – 179.5</td><td>177</td><td>2</td></tr> </tbody> </table> The heights of 20 track and field athletes of a secondary school Frequency Height (cm)	Height (cm)	Class boundaries (cm)	Class mark (cm)	Frequency	150 – 154	149.5 – 154.5	152	2	155 – 159	154.5 – 159.5	157	3	160 – 164	159.5 – 164.5	162	4	165 – 169	164.5 – 169.5	167	4	170 – 174	169.5 – 174.5	172	5	175 – 179	174.5 – 179.5	177	2	1* (47-1) 1 (47-2)	Must be all correct Construct a correct histogram
Height (cm)	Class boundaries (cm)	Class mark (cm)	Frequency																												
150 – 154	149.5 – 154.5	152	2																												
155 – 159	154.5 – 159.5	157	3																												
160 – 164	159.5 – 164.5	162	4																												
165 – 169	164.5 – 169.5	167	4																												
170 – 174	169.5 – 174.5	172	5																												
175 – 179	174.5 – 179.5	177	2																												