

TABORA MUNICIPAL COUNCIL
FORM TWO DISTRICT ASSESSMENT (FTNA)
SEPTEMBER 2026

043: MATHEMATICS

Qn	Step-by-Step Solutions & Scoring	Marks Breakdown
1a	i. 254,968 rounded to the nearest thousand is 255,000. ii. In standard form: 2.54968×10^5 .	002 Marks 003 Marks
1b	Find the LCM of 12, 18, 24: $12 = 2^2 \times 3$, $18 = 2 \times 3^2$; $24 = 2^3 \times 3$. $LCM = 2^3 \times 3^2 = 8 \times 9 = 72$. They will dock together after 72 days .	003 Marks 002 Marks
2a	Let total profit be P. $\frac{1}{4}P + \frac{2}{5}P + 350,000 = P$ $\frac{13}{20}P + 350,000$ $P - \frac{13}{20}P = 350,000$ $\frac{7}{20}P = 350,000$. $P = (350,000 \times 20)/7 = \text{TZS } 1,000,000$.	003 Marks 002 Marks
2b	Marked Price = $150,000 \times 1.20 = \text{TZS } 180,000$ Discount = 5% of 180,000 = TZS 9,000. Selling Price = $180,000 - 9,000 = \text{TZS } 171,000$. Profit = $171,000 - 150,000 = \text{TZS } 21,000$.	002 Marks 001 Mark 002 Marks
3a	Actual Distance = $5.6 \text{ cm} \times 250,000 = 1,400,000 \text{ cm}$. Convert to km $1,400,000 / 100,000 = 14 \text{ km}$.	002 Marks 003 Marks
3b	$R = kL/r^2 \rightarrow 5 = k(10)/2^2 \rightarrow 5 = 10k/4 \rightarrow k = 2$. For second wire: $R = (2 \times 15)/3^2 = 30/9 = 10/3$ Omega or 3.33 Omega.	002 Marks 003 Marks

	Consecutive interior angles sum to 180° .	
4a	$(4x + 20) + (2x + 10) = 180 \rightarrow 6x + 30 = 180 \rightarrow 6x = 150 \rightarrow$ $x = 25$. Smaller angle: $2(25) + 10 = 60^\circ$.	003 Marks 002 Marks
4b	Sum of interior angles = $(n - 2) \times 180^\circ = (8 - 2) \times 180^\circ$ $6 \times 180^\circ = 1080^\circ$. Each interior angle = $1080^\circ / 8 = 135^\circ$.	003 Marks 002 Marks
5a	i. Let Math Set be $\backslash(m\backslash)$, Ruler be r : $(4m + 3r = 13500)$ and $(2m + 5r = 8500)$. ii. Multiply eq (2) by 2: $(4m + 10r = 17000)$. Subtract eq (1): $7r = 3500 \rightarrow r = 500$. Substitute r : $(2m + 5(500) = 8500 \rightarrow 2m = 6000$ $m = 3000$ Math Set = TZS 3,000; Ruler = TZS 500.	002 Marks 004 Marks
5b	$3x - 6 < 5x + 4 \rightarrow -10 < 2x \rightarrow x > -5$. (Award marks for number line with open circle at -5 pointing right).	002 Marks 002 Marks
6a	Gradient $m = (6 - (-2))/(5 - 1) = 8/4 = 2$. Equation: $y - 6 = 2(x - 5) \rightarrow y - 6 = 2x - 10$ $y = 2x - 4$	003 Marks 003 Marks
6b	For x-intercept, set $y = 0$ $0 = 2x - 4 \rightarrow 2x = 4$ $x = 2$. The coordinate is (2, 0)	004 Marks
7a	$\sqrt{25x^3} - 2\sqrt{9x^3} + \sqrt{4x^3} = 5\sqrt{3} - 6\sqrt{3} + 2\sqrt{3} = \sqrt{3}$	003 Marks 002 Marks
7b	$\text{Log}_{10}[3(y + 4)] = \log_{10}(5y + 2) \rightarrow 3y + 12 = 5y + 2$ $10 = 2y$ $y = 5$	003 Marks 002 Marks
8a	Let width = w , length = $w + 5$. Area = $w(w + 5) = 84$ $w^2 + 5w - 84 = 0$. $w^2 + 5w + (5/2)^2 = 84 + 25/4$ $(w + 5/2)^2 = 361/4$.	002 Marks 004 Marks

$$w + 5/2 = \pm 19/2$$

$$w = 14/2 = 7 \text{ (ignore negative).}$$

Width = 7m, Length = 12m.

8b	$3x^2 - 9x - x + 3 = 0 \rightarrow 3x(x - 3) - 1(x - 3) = 0$	002 Marks
	$(3x - 1)(x - 3) = 0 \rightarrow x = 1/3 \text{ or } x = 3$	002 Marks
9a	By Pythagoras: $\text{Length}^2 = 8^2 + 6^2 = 64 + 36 = 100.$	003 Marks
	Length = $\sqrt{100} = 10$ meters.	002 Marks
9b	$\tan(60^\circ = \text{Height}/30 \rightarrow \sqrt{3} = \text{Height}/30.$	003 Marks
	Height = $30/\sqrt{3}$ meters	002 Marks
10a	Let Intersection = 12. Maize only = $30 - 12 = 18$ Cassava only $= 25 - 12 = 13.$ (Award 4 Marks for proper bounding rectangle and intersecting circles). Neither = $50 - (18 + 12 + 13) = 50 - 43 = 7$ farmers.	004 Marks 002 Marks
10b	Arranged Ascending: 55, 55, 64, 70, 72, 80. Mean = $(55 + 55 + 64 + 70 + 72 + 80)/6 = 396/6 = 66$ Median = $(64 + 70)/2 = 67.$	002 Marks 002 Marks