



TANZANIA HEADS OF ISLAMIC SCHOOL COUNCIL
FORM II INTER ISLAMIC MOCK EXAMINATION 2026

MATHEMATICS

MARKING SCHEME

1. (a) Let $x = 0.\dot{2}$(i)
 $10x = 2.\dot{2}$(ii)
 $10x - x = 2.\dot{2} - 0.\dot{2}$ **(00 $\frac{1}{2}$ Mark)**
 $9x = 2$ **(00 $\frac{1}{2}$ Mark)**
 $x = \frac{2}{9}$ **(00 $\frac{1}{2}$ Mark)**
- Let $y = 0.\dot{3}$(i)
 $10x = 3.\dot{3}$(ii)
 $10x - x = 3.\dot{3} - 0.\dot{3}$ **(00 $\frac{1}{2}$ Mark)**
 $9x = 3$ **(00 $\frac{1}{2}$ Mark)**
 $x = \frac{3}{9}$ **(00 $\frac{1}{2}$ Mark)**
- (i) $x + y = \frac{2}{9} + \frac{3}{9}$
 $= \frac{2+3}{9} = \frac{5}{9}$
 $\therefore x + y = \frac{5}{9}$ **(01 Mark)**
- (ii) $xy = \frac{2}{9} \times \frac{3}{9}$
 $= \frac{2}{9} \times \frac{1}{3} = \frac{2}{27}$
 $\therefore xy = \frac{2}{27}$ **(01 Mark)**
- (b) Let the total number of trouser be y **(00 $\frac{1}{2}$ Mark)**
Blue: White: Green = 3:4:5
Total = $3+4+5 = 12$ **(00 $\frac{1}{2}$ Mark)**
White: $\frac{4}{12}y = 20$ **(00 $\frac{1}{2}$ Mark)**
 $y = \frac{20 \times 12}{4} = 60$ **(00 $\frac{1}{2}$ Mark)**
 $\therefore$ Total number of trouser = 60 **(01 Mark)**
Blue: $\frac{3}{12} \times 60 = 15$
 $\therefore$ There are 15 blue trouser **(01 Mark)**
Green: $\frac{5}{12} \times 60 = 25$
 $\therefore$ There are 25 blue trouser **(01 Mark)**

Alternatively

$$b: w: g = 3:4:5$$

$$b: 20: g = 3:4:5$$

$$\frac{b}{20} = \frac{3}{4}$$

$$4b = 60$$

$$B = 15$$

∴ There are 15 blue trousers

$$20:g = 4:5$$

$$\frac{20}{g} = \frac{4}{5}$$

$$4g = 100$$

$$G = 25$$

∴ There are 25 blue trousers

2. (a) (i) Given $A : B = 3 : 5$
 $A : C = 6 : 7$

$$A : B = (3 : 5) \times 2 = 6 : 10 \quad \text{(01 Mark)}$$

$$A : C = (6 : 7) \times 1 = 6 : 7 \quad \text{(01 Mark)}$$

$$\therefore A : B : C = 6 : 10 : 7 \quad \text{(01 Mark)}$$

Also

$$A: B = 3.5: 1 \times 6$$

$$A:C=6:7 \times 3.5$$

$$A:B=21:6$$

$$A:C=21:24.5$$

$$\therefore A:B:C=21:6:24.5$$

OR

$$A:B:C=42:12:49$$

$$(ii) \quad 80\% \text{ of } 930\text{Ksh} = \frac{80}{100} \times 930 = 744 \text{ Ksh} \quad \text{(01 Mark)}$$

$$1\text{Ksh} = 20\text{Tsh}$$

$$744 \text{ Ksh} = ?$$

$$744 \times 20 = 14880 \text{ Tsh}$$

∴ A visitor should get 14,880 Tsh **(01 Mark)**

- (b) Let R be the Monthly rent
 A be the Area

N be the number of roommates

$$R \propto A \text{ \& } R \propto \frac{1}{N}$$

$$R \propto \frac{A}{N}$$

$$R = K \frac{A}{N} \quad \text{(01 Mark)}$$

$$K = \frac{RN}{A} \quad \text{But, } R = 400,000$$

$$N = 3$$

$$A = 900$$

$$K = \frac{400,000 \times 3}{900} = \frac{4000}{3} \quad \text{(01 Mark)}$$

$$R_2 = \frac{KA_2}{N_2}$$

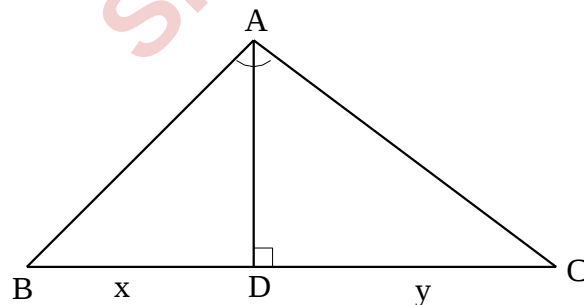
$$R = \frac{\frac{4000}{3} \times 1200}{4} = \frac{4000 \times 400}{4} \quad \text{(01 Mark)}$$

$$R = 400,000 \text{ Tsh}$$

$\therefore$ The rent for an apartment is 400,000 Tsh (02 Marks)

3. (a) The number of passengers = $150 \times 16 \times 5$ (01 Mark)
 $= 12000$ (01 Mark)
 $\approx 10,000$ (01 Mark)
 $\therefore$ The Train can carry the passengers $\approx 10,000$ Passengers (01 Mark)
- (b) The length of all the pipes = $64 \times 4.2\text{m}$
 $\approx 60 \times 4$ (01 Mark)
 $\approx 240\text{m}$ (01 Mark)
 $\therefore$ The length of all the pipes is $\approx 240\text{m}$ (01 Mark)
- (c) $67.3 \times \frac{1}{4.96} = 67.3 \times 0.2016$
 $= 13.56768$ (02 Marks)
 ≈ 14 in the whole number (01 Mark)

4. (a)



$$\Delta ABC \sim \Delta DAC$$

$$\frac{AB}{DA} = \frac{BC}{AC} = \frac{AC}{DC} \quad \text{(01 Mark)}$$

$$\frac{15}{DA} = \frac{x+y}{20} = \frac{20}{y}$$

$$BC^2 = AB^2 + AC^2 \quad \left(00\frac{1}{2} \text{ Mark}\right)$$

$$(x + y)^2 = 15^2 + 20^2$$

$$= 225 + 400 \text{ (01 Mark)}$$

$$x + y = \sqrt{625}$$

$$x + y = 25$$

$$\frac{BC}{AC} = \frac{AC}{DC}$$

$$\frac{x+y}{20} = \frac{20}{y}$$

$$\frac{25}{20} = \frac{20}{y}$$

$$y = \frac{20 \times 20}{25} \text{ (01 Mark)}$$

$$y = 16\text{cm}$$

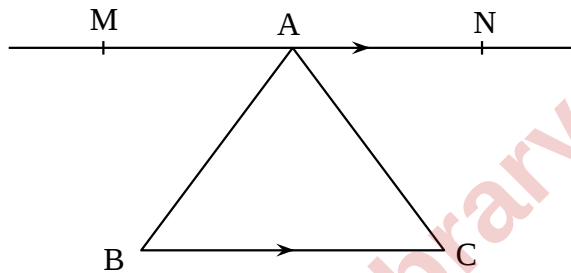
$$x + y = 25$$

$$x = 25 - 16$$

$$x = 9 \text{ (01 Mark)}$$

$$\therefore x = 9\text{cm and } y = 16\text{cm} \text{ (00}\frac{1}{2}\text{ Mark)}$$

(b)



(02 Mark)

If $MN \parallel BC$

$\widehat{MAB} = \widehat{ABC}$ and $\widehat{NAC} = \widehat{ACB}$ – Alternate interior angles (01 Mark)

$\widehat{MAB} + \widehat{BAC} + \widehat{NAC} = 180^\circ$ – Angles on a straight line (01 Mark)

$\widehat{ABC} + \widehat{BAC} + \widehat{ACB} = 180^\circ$ (01 Mark)

Hence proved.

5. (a) $(3^{x+3})(5^{2-y}) = (1/3)^4 (1/5)^8$

$$3^{x+3} = 3^{-4} \text{ (01 Marks)}$$

$$x + 3 = -4$$

$$x = -4 - 3$$

$$x = -7 \text{ (0}\frac{1}{2}\text{ Mark)}$$

$$5^{2-y} = 5^{-8} \text{ (00}\frac{1}{2}\text{ Mark)}$$

$$2 - y = -8$$

$$y = 2 + 8$$

$$y = 10 \text{ (0}\frac{1}{2}\text{ Mark)}$$

$$\text{The product } xy = -7 \times 10 \text{ (00}\frac{1}{2}\text{ Mark)}$$

$$= -70 \text{ (01 Mark)}$$

(b) $\left(\frac{\sqrt{3}}{\sqrt{5} + \sqrt{3}}\right) \left(\frac{\sqrt{5} - \sqrt{3}}{\sqrt{5} - \sqrt{3}}\right) = \left(\frac{\sqrt{15} - 3}{5 - 3}\right) \text{ (01 Mark)}$

$$= \left(\frac{\sqrt{15}-3}{2} \right) = \left(\frac{a+\sqrt{b}}{c} \right)$$

$$= \left(\frac{-3+\sqrt{15}}{2} \right) = \left(\frac{a+\sqrt{b}}{c} \right) \quad (00\frac{1}{2} \text{ Mark})$$

$$\therefore a = -3, b = 15 \text{ and } c = 2 \quad (01\frac{1}{2} \text{ Mark})$$

(c) $\log\left(\frac{35}{2}\right) = \log 35 - \log 2 \quad (00\frac{1}{2} \text{ Mark})$

$$= \log(5 \times 7) - \log 2 \quad (00\frac{1}{2} \text{ Mark})$$

$$= \log 5 + \log 7 - \log 2 \quad (00\frac{1}{2} \text{ Mark})$$

$$= 0.6990 + 0.8451 - 0.3010 \quad (00\frac{1}{2} \text{ Mark})$$

$$= 1.243$$

$$\therefore \log\left(\frac{35}{2}\right) = 1.2431 \quad (01 \text{ Mark})$$

6. (a) Let x be number of boys
y be number of girls

$$\begin{cases} x + y = 36 \dots\dots\dots (i) \\ -x + 2y = 12 \dots\dots\dots (ii) \end{cases} \quad (01 \text{ Mark})$$

$$+ \begin{cases} x + y = 36 \\ -x + 2y = 12 \end{cases} \quad (01 \text{ Mark})$$

$$\frac{3y}{3} \quad \frac{48}{3}$$

$$y = 16 \quad (01 \text{ Mark})$$

for x

$$x = 36 - y$$

$$x = 36 - 16$$

$$x = 20 \quad (01 \text{ Mark})$$

$\therefore$ The number of boys and girls are 20 and 16 respectively. **(01 Mark)**

- (b) Let x be the number of years ago

$$\text{The age of father for } x \text{ years ago} = 35 - x \quad (00\frac{1}{2} \text{ Mark})$$

$$\text{The age of son for } x \text{ years ago} = 9 - x \quad (00\frac{1}{2} \text{ Mark})$$

$$\text{Product } (35 - x)(9 - x) = 87 \quad (01 \text{ Mark})$$

$$x^2 - 44x + 228 = 0 \quad (01 \text{ Mark})$$

$$x(x - 6) - 38(x - 6) = 0 \quad (01 \text{ Mark})$$

$$x = 38 \text{ or } x = 6$$

$\therefore$ The number of years ago was 6 years **(01 Mark)**

7. (a) $\mu = \{1, 2, 3, 4, 5, 6, \dots, 25\}$
- $$A = \{3, 6, 9, 12, 15, 18, 21, 24\} \quad (00\frac{1}{2} \text{ Mark})$$
- $$B = \{1, 2, 3, 6, 9, 18\} \quad (00\frac{1}{2} \text{ Mark})$$

$$A \cap B = \{3, 6, 9, 18\} \text{ (01 Mark)}$$

$$(i) \quad n(A \cap B) = 4 \quad \left(00\frac{1}{2} \text{ Mark}\right)$$

$$(ii) \quad A \cup B = \{1, 2, 3, 5, 6, 9, 12, 15, 18, 21, 24\} \quad \text{(01 Mark)}$$

$$(A \cup B)' = \{4, 5, 7, 8, 10, 11, 13, 14, 16, 17, 19, 20, 22, 23, 25\} \quad \text{(01 Mark)}$$

$$n(A \cup B)' = 15 \quad \text{(01 Mark)}$$

$$(b) \quad \text{Given that } n(U) = 300, n(B) = 200, n(R) = 120 \quad n(B \cap R) = 60$$

$$\text{From: } n(B \cup R) = n(B) + n(R) - n(B \cap R) \quad \left(00\frac{1}{2} \text{ Mark}\right)$$

$$n(B \cup R) = 200 + 120 - 60 \\ = 320 - 60 \quad \text{(01 Mark)}$$

$$\therefore n(B \cup R) = 260 \quad \left(00\frac{1}{2} \text{ Mark}\right)$$

$$\text{From } n(U) = n(B \cup R) + n(B \cup R)' \quad \text{(01 Mark)}$$

$$300 = 260 + n(B \cup R)' \quad \left(00\frac{1}{2} \text{ Mark}\right)$$

$$n(B \cup R)' = 300 - 260$$

$$n(B \cup R)' = 40 \quad \text{Type equation here.}$$

$$\therefore 40 \text{ people like neither Banana nor rice} \quad \text{(01 Mark)}$$

$$8. \quad (a) \quad \text{Since } \overline{AC} = \overline{BC} \quad \dots \triangle ABC \text{ is Isosceles triangle}$$

$$\widehat{ABC} = \widehat{BAC}$$

$$b = 60^\circ \quad \text{(01 Mark)}$$

$$\widehat{ABC} + \widehat{BAC} + \widehat{ACB} = 180^\circ \dots \text{angles in triangles.} \quad \left(00\frac{1}{2} \text{ Mark}\right)$$

$$b + 60^\circ + a = 180^\circ$$

$$60^\circ + 60^\circ + a = 180^\circ$$

$$a = 180^\circ - 120^\circ$$

$$a = 60^\circ \quad \text{(01 Mark)}$$

$$\overline{BD} = \overline{CD} \quad \dots \triangle BCD \text{ (by SSS in triangle)}$$

$$\widehat{CBD} = \widehat{BCD}$$

$$40^\circ = c \quad \text{(01 Mark)}$$

$$c = 40^\circ \text{ — 01 mark}$$

$$\widehat{CBD} + \widehat{BCD} + \widehat{CDB} = 180^\circ \dots \text{angles in triangle} \quad \left(00\frac{1}{2} \text{ Mark}\right)$$

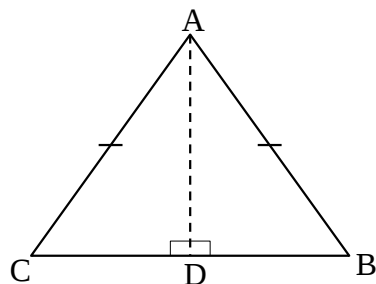
$$40^\circ + 40^\circ + d = 180^\circ$$

$$d = 180^\circ - 80^\circ$$

$$d = 100^\circ \quad \text{(01 Mark)}$$

$$\therefore a = 60^\circ, b = 60^\circ, c = 40^\circ, \text{ and } d = 100^\circ$$

(b)



$$\overline{AC} = \overline{AB} \text{ given} \quad (01 \text{ Mark})$$

$$AD - \text{common} \quad (01 \text{ Mark})$$

$$\widehat{ADC} = \widehat{ADB} = 90^\circ - \text{given} \quad (01 \text{ Mark})$$

$$\therefore \triangle ADC \cong \triangle ADB \text{ (RHS)} \quad (01 \text{ Mark})$$

$$\text{Since } \triangle ADC \cong \triangle ADB$$

$$\text{Since } \triangle ADC \cong \triangle ADB$$

$$\overline{CD} = \overline{DB}$$

$$\therefore D \text{ is a Midpoint of } \overline{BC} \quad (01 \text{ Mark})$$

9. (a) Given that $A(n, 3), B(4, 5), m = \frac{2}{3}$

$$\text{Slope (m)} = \frac{y_2 - y_1}{x_2 - x_1} \quad (01 \text{ Mark})$$

$$\frac{2}{3} = \frac{5 - 3}{4 - n} \quad (01 \text{ Mark})$$

$$\frac{2}{3} = \frac{2}{4 - n} \quad (01 \text{ Mark})$$

$$6 = 2(4 - n)$$

$$6 = 8 - 2n \quad (01 \text{ Mark})$$

$$6 - 8 = -2n$$

$$-2 = -2n$$

$$n = 1 \quad (01 \text{ Mark})$$

(b) Given that $2x + 3y = 12$

$$\frac{3y}{3} = \frac{-2x + 12}{3} \quad (01 \text{ Mark})$$

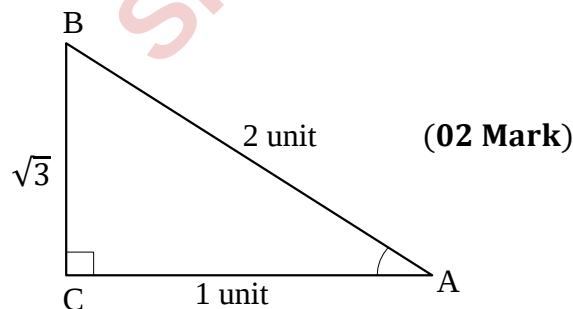
$$y = -\frac{2}{3}x + 4 \quad (02 \text{ Marks})$$

$$\therefore \text{The gradient is } -\frac{2}{3} \quad (01 \text{ Mark})$$

$$\text{y intercept is } 4 \quad (01 \text{ Mark})$$

10. (a) Given $10 \cos A = 5$

(i)



$$\cos A = \frac{5}{10}$$

$$\cos A = \frac{5}{10} = \frac{\text{Adj}}{\text{Hy}}$$

(ii) From Pythagoras theorem

$$AB^2 = AC^2 + BC^2$$

$$2^2 = 1^2 + BC^2$$

$$BC^2 = 4 - 1$$

$$= \sqrt{3} \quad (01 \text{ Mark})$$

$$BC = \sqrt{3}$$

$$\sin A = \frac{\text{OPP}}{\text{Hyp}} = \frac{\sqrt{3}}{2}$$

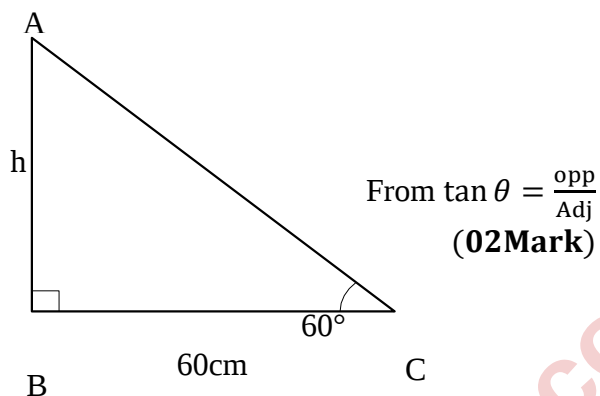
$$\sin A = \frac{\sqrt{3}}{2} \quad (01 \text{ Mark})$$

$$5 \sin A \cos A$$

$$5 \times \frac{\sqrt{3}}{2} \times \frac{1}{2} = \frac{5\sqrt{3}}{4}$$

$$\therefore 5 \sin A \cos A = \frac{5\sqrt{3}}{4} \quad (01 \text{ Mark})$$

(b)



$$\tan 60 = \frac{h}{60} \quad (01 \text{ Mark})$$

$$h = 60 \tan 60$$

$$h = 60 \times \sqrt{3} \quad (01 \text{ Mark})$$

$$h = 103.92 \text{ cm}$$

$$\therefore \text{The height of tree} = 103.92 \text{ cm} \quad (01 \text{ Mark})$$

Wabillah Tawfiiq