MATHEMATICS
FORM 2
MID TERM 2 2025
MARKING SCHEME

1. Without using mathematical tables, evaluate; (3 mks)

$$\frac{27.72 \times 0.3876}{2.09 \times 0.4284}$$

$= \frac{163 \times 204}{1091}$

$= 11.78$

2. Find the equation of a line which joins the points AB . when A(3, 2) and B(-2, 5) . (3 mks)

$\text{grad} = \frac{5-2}{-2-3} = \frac{3}{-5}$

$\frac{y-2}{x-3} = -\frac{3}{5}$

$5y - 10 = -3x + 9$

$5y = -3x + 19$

$y = -\frac{3}{5}x + \frac{19}{5}$

3 The sum of the interior angles of an n-sided polygon is 1440°. Find the value of n and hence deduce the name of the polygon. (3 mks)

$(n-2)180 = 1440$

$180n - 360 = 1440$

$180n = 1800$

$n = 10$ sides

Decagon

4. Solve the simultaneous equation; (3 mks)

$x + y = 10$

$x - y = 2$

$2x = 12$

$x = 6$

$x + y = 10$

$6 + y = 10$

$y = 4.$

5. Kambo bought a suit for sh 1200 and marked it at a price such that after allowing his customer a 10% discount, he would make a profit of 20%. Calculate the marked price of the suit. (4 mks)

S.P $= \frac{120}{100} \times 1200$

$= 1440$

$90\% = 1440$

$100\% = \frac{100 \times 1440}{90} = \text{sh } 1600$

$19/2 - (11/3 \times 9/5)$ | $3/5 \times 25/4 + 3/2$ | $29/10 \div 21/4$

$= 19/2 - 33/5$ M | $= 21/4$ M | $29/10 \times 4/21$

$= 29/10$ | | $= 58/10.5$ A1

6. Without using a calculator, evaluate the following; (3 mks)

Correct

$$\frac{9\frac{1}{2} - 3\frac{2}{3} \div \frac{5}{9}}{\frac{3}{5} \text{ of } 6\frac{1}{4} + 1\frac{1}{2}}$$

Num

$19/2 - (16/3 \div 5/6)$ | Dem $(3/5 \text{ of } 25/4) + 3/2$ | $= 62/105$

$19/2 - 32/5 = 31/10$ | $15/4 + 3/2 = 21/4$ | $31/10 \div 21/4$

7. (a) Use mathematical tables to find;
   (i) The square of 6.897 (1 mk)
   (ii) The reciprocal of 28.74 (1 mk)

(i) $(6.897)^2 = 47.57$ ✓A1

(ii) $28.74^{-1} = 0.0348$ ✓M1 ✓A1

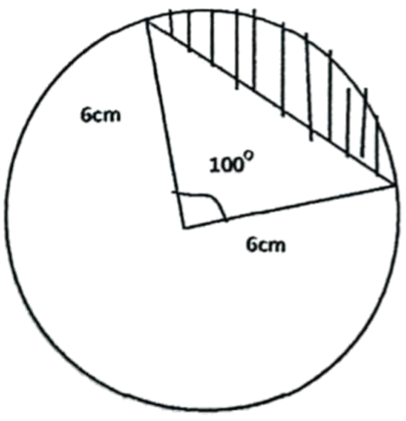
Wrong

(b) Hence calculate to 4 s.f the value of; $6.897 + \frac{1}{28.74}$ (2 mks)

$47.57 + 0.0348$ M

$= 47.6048$ ✓A1

8 The figure below shows a circle centre O and radius 6cm. Sector AOB subtends an angle of 100° at the centre of the circle as shown. Calculate to 2 d.p. the area of the shaded region. (Take $\pi = 3.142$) (3 mks)



Sector area

$100/360 \times 3.142 \times 6^2$ M

$= 31.42 \text{ cm}^2$ ✓A1

Area of triangle

$1/2 \times 6 \times 6 \sin 100$ M

$= 17.73$

Shaded area

$= 31.42 - 17.73$

$= 13.69 \text{ cm}^2$ ✓A1

9. John bought three cows and twenty five goats spending a total of Sh 75,000. IF he had bought two cows and thirty three goats he would have saved sh 5400. Find the cost of each animal [4mks]

$2(3c + 25g = 75000)$
$3(2c + 33g = 69,600)$
$6c + 99g = 208800$
$6c + 50g = 150000$
$49g = 58,800$
$g = 1,200$
$3c + 25(1200) = 75000$
$3c + 30,000 = 75000$
$3c = 45000$
$c = 15000$
goats = 1,200
Cows = 15,000

10. Four schools Wiobiero, Asumbi, Nyawita and Angiro are such that Wiobiero is 15km from Asumbi on a bearing of 158°, Nyawita is to the west of Asumbi and 20km away while An'giro is to the South of Nyawita and on a bearing of 240° from Wiobiero.

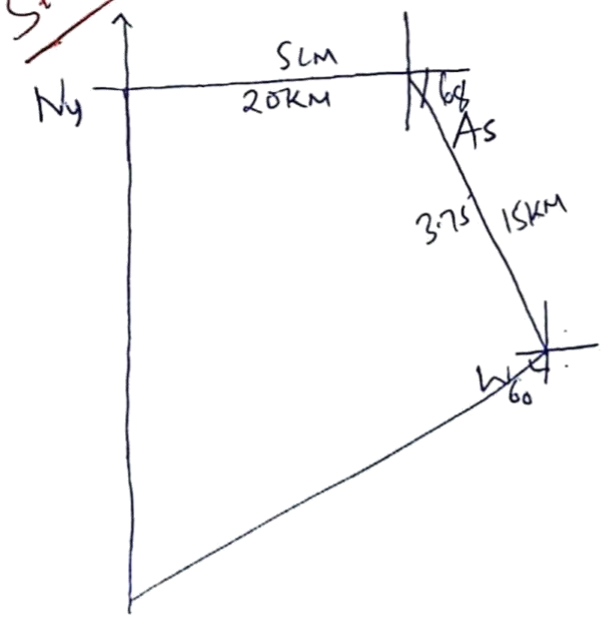
(a) Using a scale of 1:400,000 draw a scale diagram showing the relative positions of the four schools. (5mks)

1CM rep 4KM

(b) Using your diagram determine the distance and bearing of Ang'iro from Asumbi (2mks)

S25°W // B
205°
12.3cm x 4
49.2KM ± 0.5KM B

(c) A mast is to be erected so that its equidistant from Asumbi and Nyawita and 20km from Ang'iro on the same diagram show the position of the mast and find its distance from Wiobiero (3mks)



11. On the graph paper provided, plot the triangle whose co-ordinates are A(1, 3) B(2, 1) and C(3, 4).(1 mk)

(a) On the same grid, draw;