

EDUCATION-NEWS CONSULT
OCT 2024 BECE HOME MOCK 1 (2025 BECE)
MATHEMATICS
MARKING SCHEME

OBJECTIVES

1. B	11. A	21. B	31. A
2. B	12. A	22. C	32. B
3. A	13. B	23. D	33. D
4. C	14. B	24. B	34. A
5. B	15. D	25. D	35. A
6. D	16. A	26. C	36. D
7. D	17. C	27. A	37. D
8. B	18. B	28. C	38. A
9. B	19. B	29. B	39. B
10. C	20. A	30. B	40. D

QUESTION 1

a. Total Amount = $120 + 80 + 40 + 110 + 50 = \text{GH}¢400$ M0.5

Item	Amount (GH¢)	Angles	
Food	120	$\frac{120}{400} \times 360 = 108^\circ$	M0.5 A0.5
Rent	80	$\frac{80}{400} \times 360 = 72^\circ$	M0.5 A0.5
Clothing	40	$\frac{40}{400} \times 360 = 36^\circ$	M0.5 A0.5
Transport	110	$\frac{110}{400} \times 360 = 99^\circ$	M0.5 A0.5
Savings	50	$\frac{50}{400} \times 360 = 45^\circ$	M0.5 A0.5

B2.5

b. $3 + (2\frac{1}{3} + 1\frac{1}{6})$
 $= 3 + (\frac{7}{3} + \frac{7}{6})$ M0.5
 $= 3 + \frac{14+7}{6}$ M1
 $= \frac{3+21}{6}$ M1
 $= \frac{24}{6}$ M1
 $= 4$ A0.5

c. $5(p - 2g - r) + 3(p - g - 2r)$
 $= 5p - 10g - 5r + 3p - 3g - 6r$ M1
 $= 5p + 3p - 10g - 3g - 5r - 6r$ M1
 $= 8p - 13g - 11r$ A1

QUESTION 2

(a) (i) Length, $L = (2x + 5)\text{m}$
Width, $W = (x - 10)\text{m}$
Perimeter = 80m
Perimeter of a rectangle = $2L + 2W$ M1
 $\therefore 2L + 2W = 80$ M1
 $2(2x + 5) + 2(x - 10) = 80$ M0.5
 $4x + 10 + 2x - 20 = 80$ M0.5

$$6x - 10 = 80$$

M0.5

$$6x = 80 + 10$$

M0.5

$$x = \frac{90}{6} = 15$$

A1

(ii) Length = $2 \times 15 + 5 = 35\text{m}$ M0.5

Width = $15 - 10 = 5\text{m}$ M0.5

Area = Length \times Width M0.5

= $35 \times 5 = 175\text{m}^2$ A1

(iii) The cost of weeding a $\text{m}^2 = \text{GH}0.24$

\therefore The cost of weeding the plot = 175×0.24 M0.5

= $\text{GH}42.00$ A1

(b) $851.654 = 800 + 50 + 1 + \frac{6}{10} + \frac{5}{100} + \frac{4}{1000}$ M1.5

$-372.809 = -300 - 70 - 2 - \frac{8}{10} - \frac{0}{100} - \frac{9}{1000}$ M1.5

$478.845 = 400 + 70 + 8 + \frac{8}{10} + \frac{4}{100} + \frac{5}{1000}$ A3

QUESTION 3

a. $(15p^3q^2 \times 12x^5y^3) \div (36pq \times 45xy)$

$$= \frac{15p^3q^2 \times 12x^5y^3}{36pq \times 45xy} = \frac{(15p^3q^2) \times (12x^5y^3)}{(36pq) \times (45xy)} \quad \text{M1}$$

$$= \frac{(3 \times 5 \times p \times p \times p \times q \times q) \times (3 \times 4 \times x \times x \times x \times x \times x \times y \times y \times y)}{(3 \times 3 \times 4 \times p \times q) \times (3 \times 3 \times 5 \times x \times y)} \quad \text{M1}$$

$$= \frac{(5 \times p \times p \times q) \times (4 \times x \times x \times x \times x \times y \times y)}{(3 \times 4) \times (3 \times 5)} \quad \text{M1}$$

$$= \frac{(p \times p \times q) \times (x \times x \times x \times x \times y \times y)}{3 \times 3} \quad \text{M1}$$

$$= \frac{p^2qx^4y^2}{9} \quad \text{M1}$$

b. $\frac{55+52+50+y+48}{5} = 47$ M1

$$\frac{205+y}{5} = 47 \quad \text{M}\frac{1}{2}$$

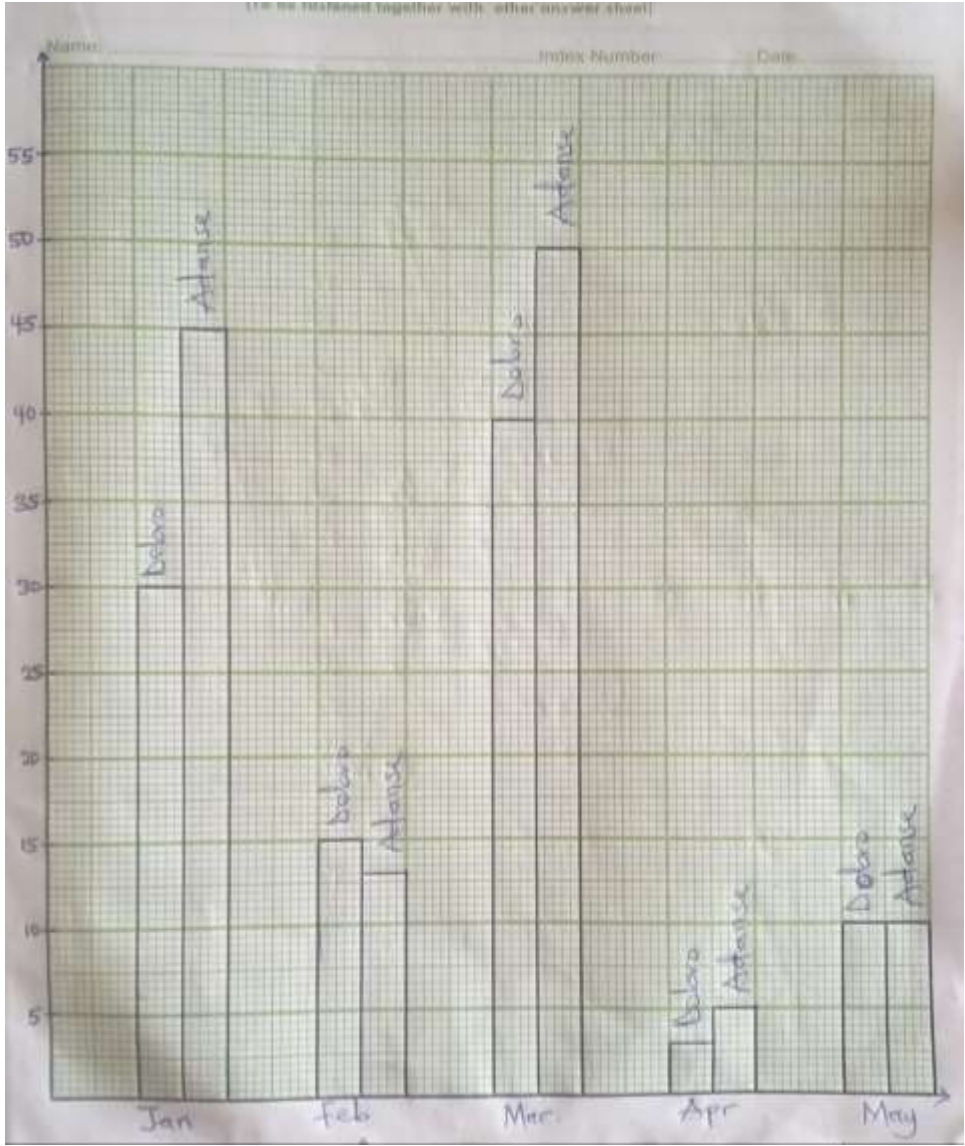
$$205 + y = 47 \times 5 \quad \text{M}\frac{1}{2}$$

$$205 + y = 235$$

$$y = 235 - 205 \quad \text{M1}$$

$$y = 30 \quad \text{M1}$$

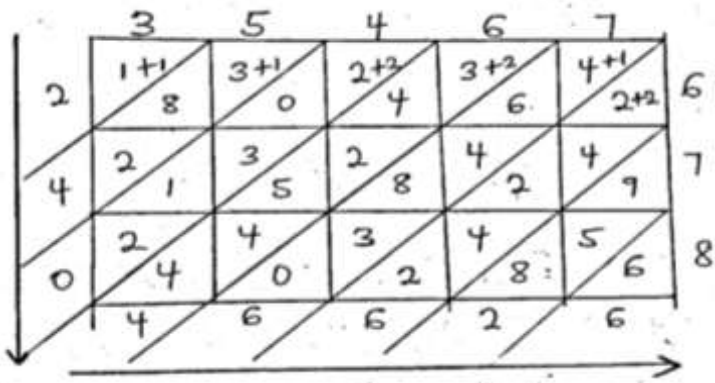
3.c



1 mark for each double bar = 5 marks
1 mark for the axes

QUESTION 4

a.



$$35467 \times 678 = 24,046,626$$

B4

A1

- b. Let x = price of two dozen of eggs = GH¢17.00
 y = price of one loaf of bread = GH¢9.00
 z = price of one bottle of juice = GH¢14.70

$$\text{Money needed} = x + 4y + 13z \quad \text{B1}$$

$$= \text{GH¢}17.00 + 4(\text{GH¢}9.00) + 13(\text{GH¢}14.70) \quad \text{M1}$$

$$= \text{GH¢}17.00 + \text{GH¢}36.00 + \text{GH¢}191.10 \quad \text{M1}$$

$$= \text{GH¢}244.10 \quad \text{A1}$$

- c. Area of whole figure = Length \times Width

$$= pcm \times qcm \quad \text{B}_2^1$$

$$= pqcm^2 \quad \text{A1.5}$$

$$\text{Area of unshaded portion} = \text{Length} \times \text{Width}$$

$$= 9cm \times 6cm \quad \text{B}_2^1$$

$$= 54cm^2 \quad \text{A1.5}$$

$$\text{Area of shaded portion} = pqcm^2 - 54cm^2 \quad \text{A2}$$

5. $U = \{18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 30, 31, 32, 33, 34, 35, 36\}$ M1

$$P = \{18, 21, 24, 27, 30, 33, 36\} \quad \text{M1}$$

$$Q = \{18, 24, 36\}$$

$$R = \{18, 20, 22, 24, 26, 28, 30, 32, 34, 36\} \quad \text{A1}$$

b. (i) $P \cap Q = \{18, 24, 36\}$ A1

(ii) $Q \cap R = \{18, 24, 36\}$ A1

(iii) $P' \cap R = \{19, 20, 22, 23, 25, 26, 28, 29, 31, 32, 34, 35\} \cap \{18, 20, 22, 24, 26, 28, 30, 32, 34, 36\}$ M1

$$= \{20, 22, 26, 28, 32, 34\} \quad \text{A1}$$

(v) $P \cap Q = Q \cap R$

A1

- c. (i) Length, $L = (2x + 5)m$

$$\text{Width, } W = (x - 10)m$$

$$\text{Perimeter} = 80m$$

$$\text{Perimeter of a rectangle} = 2L + 2W \quad \text{M1}$$

$$\therefore 2L + 2W = 80 \quad \text{M1}$$

$$2(2x + 5) + 2(x - 10) = 80 \quad \text{M0.5}$$

$$4x + 10 + 2x - 20 = 80 \quad \text{M0.5}$$

$$6x - 10 = 80 \quad \text{M0.5}$$

$$6x = 80 + 10 \quad \text{M0.5}$$

$$x = \frac{90}{6} = 15 \quad \text{A1}$$

(ii) Length = $2 \times 15 + 5 = 35m$ M0.5

$$\text{Width} = 15 - 10 = 5m \quad \text{M0.5}$$

$$\text{Area} = \text{Length} \times \text{Width} \\ = 35 \times 5 = 175m^2 \quad \text{A1}$$

6. a. for $x = -2$

$$y = 5 - 2(-2)$$

$$y = 9$$

$$\text{for } x = -1$$

$$y = 5 - 2(-1)$$

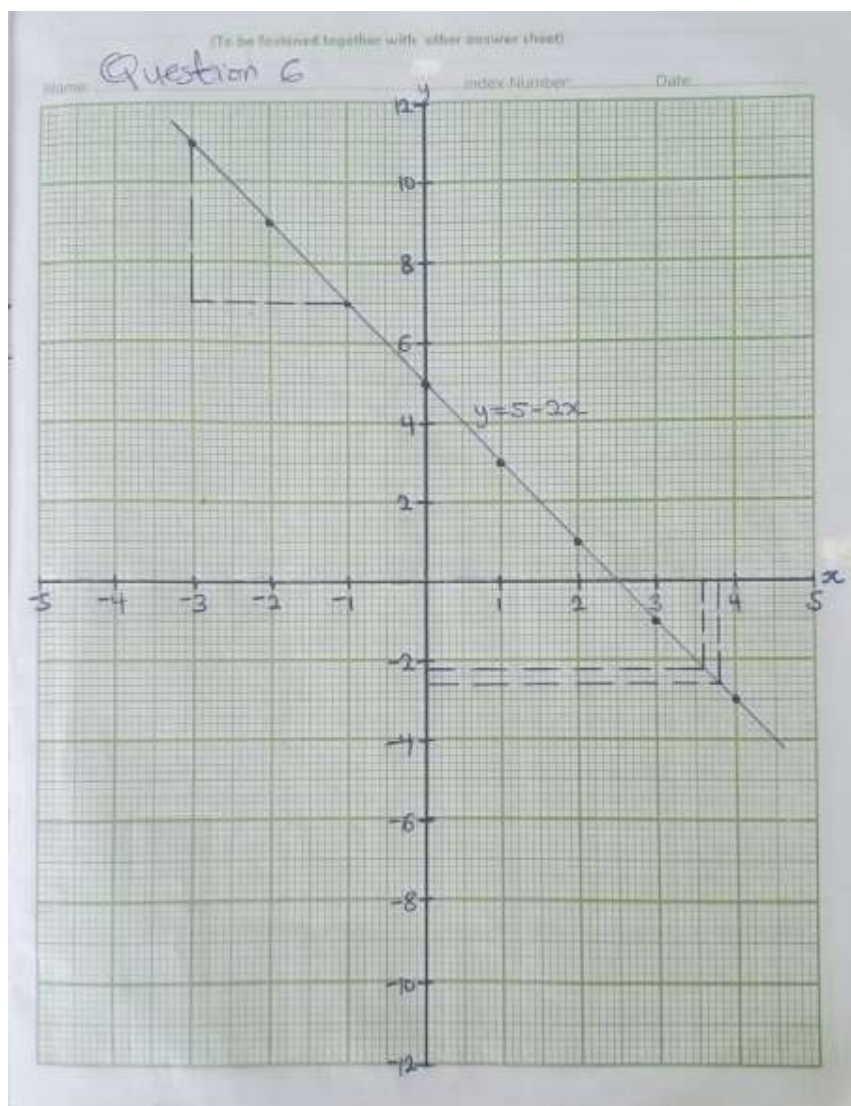
$$y = 7$$

for $x = 1$
 $y = 5 - 2(1)$
 $y = 3$

for $x = 3$
 $y = 5 - 2(3)$
 $y = -1$

x	-3	-2	-1	0	1	2	3	4
y	11	9	7	5	3	1	-1	-3

4 marks for table



2 marks for axes @ 1 each

4 mark for points @ $\frac{1}{2}$ each

1 mark for straight line

d.. from the graph;

i. when $x = 3.6, y = -2.2$ A1

ii. when $y = -2.6, x = 3.8$ A1

ii. Gradient = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - 11}{-1 - -3} = \frac{-4}{1} = -4$ M1A1