

UCE 2025 UNEB PROPOSED SCORING GUIDE
MTC

Item 1	Tr. Ablair														
<p>To establish the number of farmers that will receive the items.</p>	<p>Let the number of farmers be the G.C.F of 450 and 120.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>2</td> <td>450</td> <td>120</td> </tr> <tr> <td>3</td> <td>225</td> <td>60</td> </tr> <tr> <td>5</td> <td>75</td> <td>20</td> </tr> <tr> <td></td> <td>15</td> <td>4</td> </tr> </table> <p>G.C.F = $2 \times 3 \times 5$ = 30.</p> <p>\therefore The number of farmers that will receive the items will be 30.</p>	2	450	120	3	225	60	5	75	20		15	4	<p>I-1 For H.C.F of 450 and 120.</p> <p>M₁-1</p> <p>M₁-1 For Multiplication</p> <p>M₁-1 Output</p> <p>AP₁-1 Conclusion</p>	
2	450	120													
3	225	60													
5	75	20													
	15	4													
<p>To establish the number of kgs of fertilizers and litres of vaccine each will get.</p>	<p>Each farmer will get 15 kilograms of fertilizers and 4 litres of anti-tick vaccine</p> <p style="text-align: right;">Tr. Ablair</p>	<p>AP₁-1</p> <p>AP₁-1</p>	<p>For conclusion</p>												
<p>b) To determine the amount of money he collects from the milk he sells.</p>	<p>Daily milk production = 180 litres</p> <p>60% litres of milk sold = $\frac{60}{100} \times 180$ = 108 litres.</p> <p>1 litre is sold at shs. 850.</p> <p>108 litres are sold at 108×850 = shs. 91,800.</p> <p>\therefore He collects shs. 91,800 from the milk he sells.</p>	<p>I-1 Converting from words to figures</p> <p>I-1 For percentage.</p> <p>M₁-1 Output.</p> <p>I-1 For multiplication</p> <p>M₁-1 For output</p> <p>AP₁-1 For conclusion</p>													
<p>To determine the amount of milk he should use to make butter.</p>	<p>Remaining litres after sale = $180 - 108$ = 72 litres</p> <p>litres donated to orphanage = $\frac{1}{15} \times 72$ = 4.8 litres</p> <p>Remainder = $72 - 4.8$ = 67.2 litres.</p> <p>Ratio = 1:3.</p> <p>Total ratio = $1+3$ = 4</p>	<p>I-1</p> <p>M₁-1</p> <p>I-1</p> <p>M₁-1</p> <p>I-1</p> <p>M₁-1</p> <p>I-1</p> <p>M₁-1</p>													

Litres used to make butter.

$$= \frac{3}{4} \times 67.2.$$

$$= 50.4 \text{ litres}$$

∴ He should use 50.4 litres of milk to make butter.

I-1

M₁-1

AP₁-1

Item 2

To determine the number of workers in each section of the farm

Let the number of workers in the cattle section and goat section be x and y respectively.

Equation for animals

$$50x + 30y = 310 \text{ ----- (1)}$$

Equation for payments.

$$150,000x + 100,000y = 950,000 \text{ ----- (2)}$$

From equation 1.

$$5x + 3y = 31$$

$$5x = 31 - 3y.$$

$$x = \frac{31 - 3y}{5}$$

From equation 2.

$$150,000x + 100,000y = 950,000$$

$$3x + 2y = 19 \text{ ----- *}$$

Sub x in equation *.

$$3\left(\frac{31 - 3y}{5}\right) + 2y = 19.$$

$$\frac{93 - 9y}{5} + 2y = 19.$$

$$93 - 9y + 10y = 95.$$

$$93 + y = 95.$$

$$y = 95 - 93.$$

$$y = 2.$$

Sub y in $x = \frac{31 - 3y}{5}$.

$$x = \frac{31 - 3(2)}{5}$$

$$x = \frac{25}{5}$$

$$x = 5.$$

The number of workers in the cattle section is 5 workers.

The number of workers in the goat's section is 2 workers.

F-1 Defining variables

F-1 For equation 1

F-1 For eqn 2.

M₂-1

M₂-1

M₂-1

M₂-1

A_P-1

A_P-1

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To form an equation she should use basing on the records.

Let the litres of milk be x .
Let the Amount paid be y .

x	100	80	120
y	150,000	120,000	180,000

Basing on the records; $y \propto x$.

$$y = kx.$$

$$\frac{y}{x} = k.$$

When $x = 100$, $y = \text{sh. } 150,000$.

$$\frac{150,000}{100} = k.$$

$$k = 1500.$$

Therefore $y = 1500x$.

\therefore The equation is $y = 1500x$ and the constant wholesale price of each litre of milk is sh. 1500.

F-1 For equation

M_2-1

M_2-1

F-1

AP_1-1

Tr. Ans. lair

To calculate the amount of money she is likely to receive from the sales of milk next month

Using the equation $y = 1500x$.

Next month, $x = 135$.

$$y = 1500 \times 135 \\ = \text{shs. } 202,500.$$

\therefore The amount of money she is likely to receive from the sale of milk next month is sh. 202,500.

M_2-1

M_2-1

AP_1-1

Item 3

To organise the information in rows and columns

An item matrix

	Soda	Juice	Water
Moses	12	15	20
Sarah	18	12	15

2 x 3.

A cost matrix

	Cost
Soda	1000
Juice	2000
Water	500

3 x 1

P-1 For title

P-1 Labelling

A₃-1 Inserting data

A₃-1 Correct order

A₃-1 Inserting data correctly.

Tr. ABLair

To calculate the amount she should expect from each of the workers.

Using matrix multiplication

$$\begin{pmatrix} 12 & 15 & 20 \\ 18 & 12 & 15 \end{pmatrix} \begin{pmatrix} 1000 \\ 2000 \\ 500 \end{pmatrix}$$

$$= \begin{pmatrix} 12 \times 1000 + 15 \times 2000 + 20 \times 500 \\ 18 \times 1000 + 12 \times 2000 + 15 \times 500 \end{pmatrix}$$

$$= \begin{pmatrix} 12,000 + 30,000 + 10,000 \\ 18,000 + 24,000 + 7,500 \end{pmatrix}$$

$$= \begin{pmatrix} 52,000 \\ 49,500 \end{pmatrix}$$

She should expect shs. 52,000 from Moses and sh. 49,500 from Sarah.

A₃-1

A₃-1

A₃-1

IN-1

IN-1

To determine the probability with which the worker with the highest chance will be selected

A table showing the probability space of tossing two coins

		Coin 1	
		H	T
Coin 2	H	H,H	H,T
	T	T,H	T,T

$$S = \{(H,H), (H,T), (T,H), (T,T)\}$$

$$n(S) = 4$$

Let the event of atleast one head appearing on top be A.

$$A = \{(H,T), (T,H), (H,H)\}$$

$$n(A) = 3$$

$$\text{Probability of A, } P(A) = \frac{n(A)}{n(S)}$$

$$= \frac{3}{4} \text{ or } 75\%$$

Let the event of no head appearing on top be B.

$$B = \{(T,T)\}$$

$$n(B) = 1$$

$$\text{Probability of B, } P(B) = \frac{n(B)}{n(S)}$$

$$= \frac{1}{4} \text{ or } 25\%$$

The probability with which the worker with the highest chance will be $\frac{3}{4}$ or 75%.

The worker to attend to the shop is Moses
Reason, He has the highest chance of being selected.

P-1

A₃₋₁

A₃₋₁

A₃₋₁

A₃₋₁

IN-1

IN-1

IN-1

Item 4

A frequency distribution table.
Let the learner's scores be the class.

Class	frequency, f	Midpoint, X	$f \times X$	C.f	Class boundaries
15 - 24	15	19.5	292.5	15	14.5 - 24.5
25 - 34	30	29.5	885	45	24.5 - 34.5
35 - 44	10	39.5	395	55	34.5 - 44.5
45 - 54	45	49.5	2,227.5	100	44.5 - 54.5
55 - 64	90	59.5	5,355	190	54.5 - 64.5
65 - 74	50	69.5	3,475	240	64.5 - 74.5
75 - 84	30	79.5	2,385	270	74.5 - 84.5
85 - 94	5	89.5	447.5	275	84.5 - 94.5
	$\Sigma f = 275$		$\Sigma f \times X = 15,462.5$		

Tr. ABlaiv

P-1 For labelling
A₃-1 For class.
A₃-1 For midpoint
A₃-1 For f x.
A₃-1 for C.f.
A₃-1 For $\Sigma f \times X$
A₃-1 For Σf

$$\begin{aligned} \text{Mean score} &= \frac{\Sigma f \times X}{\Sigma f} \\ &= \frac{15462.5}{275} \\ &= 56.22727273 \\ &\approx 56\% \end{aligned}$$

A₃-1
A₃-1

Difference = 56 - 54 = 2%
There is an ~~ant~~ increase

There is an ~~increase~~ improvement in the learners performance since the mean score increased by 2%

IN-1 Conclusion
IN-1 Reason

To determine the percentage of the learners below the pass mark of 55%

Using an Ogive, on the graph paper,
Number of learners below the pass mark =

$$\text{Percentage} = \frac{\text{No. of learners below pass mark}}{\text{No. of learners in class}} \times 100\%$$

A₃-1
A₃-1
IN-1
IN-1

Item 5.

ITEM 5

Response.

score

To know how much the tourist will get on arrival in Uganda

Money she came with = \$ 1250.
 $1 \$ = \text{Ugx } 3490.$
 $\$ 1250 = 1250 \times 3490$
 $= \text{Ugshs. } 4,362,500.$

M4-1

A4-1

In Kenyan shillings

$\text{Kshs. } 1 = \text{Ugsh. } 28.5$

M4-1

$\text{Ugsh. } 4,362,500 : \frac{4,362,500}{28.5}$

A4-1

$= \text{K.shs. } 153,070.1754$

Amount spent in Kenya.

M4-1

$\frac{30}{100} \times 153,070.1754$

A4-1

$= \text{Kshs. } 45,921.05268$

Remainder = $153,070.1754 - 45,921.05268$

M4-1

$= \text{Kshs. } 107,149.1228$

A4-1

$= \text{Kshs. } 107,149.1228$

Amount in Uganda shillings

$1 \text{ Ksh} = 27.47 \text{ Ugsh.}$

$\text{Ksh. } 107,149.1228 \times 27.47$

M4-1

$= \text{Ugsh. } 2,943,386.402.$

A4-1

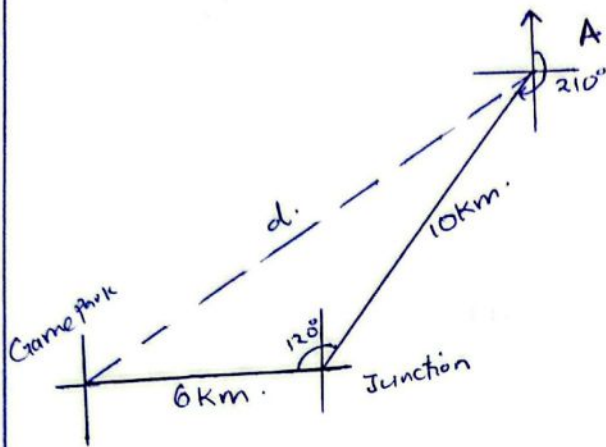
$\approx \text{Ugsh. } 2,943,300$

The Tourist will ~~get~~ get Ugshs. 2,943,300 on arrival in Uganda.

A4-1

to determine Sketch.

the extra
amount
the tourist
will pay
or using
alternative
route.



$$\begin{aligned} \text{speed} &= 72 \text{ km/hr} \\ \text{Time} &= 5 \text{ minutes} \\ &= \left(\frac{5}{60}\right) \text{ hours.} \end{aligned}$$

$$\begin{aligned} \text{Distance} &= S \times T \\ &= 72 \times \frac{5}{60} \\ &= 6 \text{ km.} \end{aligned}$$

M₄-1 For sketch

M₄-1 For calculating distance

Using Cosine rule. $a^2 = b^2 + c^2 - 2bc \cos A$.

$$d^2 = 6^2 + 10^2 - 2(6)(10) \cos 120^\circ.$$

$$d^2 = 36 + 100 - 120\left(\frac{1}{2}\right)$$

$$d^2 = 136 + 60.$$

$$d^2 = 196.$$

$$\begin{aligned} d &= \sqrt{196} \\ &= 14 \text{ km.} \end{aligned}$$

A₄-1

A₄-1

A₄-1

Amount paid for the direct route.

1 km costs sh. 12,500

14 km cost $14 \times 12,500$

$$= \text{Ugsh. } 175,000.$$

M₄-1

A₄-1

Amount paid for the alternative route.

$$\text{Distance} = 10 + 6$$

$$= 16 \text{ km}$$

$$\text{Amount} = 16 \times 12,500$$

$$= \text{Ugsh. } 200,000.$$

$$\text{Difference} = 200,000 - 175,000$$

$$= \text{Ugsh. } 25,000.$$

M₄-1

A₄-1

M₄-1

A₄-1

M₄-1

A₄-1

She will pay an extra money of Ugsh. 25,000 for using the alternative route.

A₄-1

To calculate the amount in US dollars the tourist will get after exchange.

$$\text{Amount spent} = \text{Ugsh. } 1,141,500.$$

$$\begin{aligned} \text{Remainder} &= 2,943,300 - 1,141,500 \\ &= \text{Ugsh. } 1,801,800. \end{aligned}$$

Amount in US dollars.

$$1 \$ = \text{Ugsh. } 3600.$$

$$\text{Ugsh. } 1,801,800 = \$ \left(\frac{1,801,800}{3600} \right)$$

$$= 500.5 \text{ US dollars}$$

$$= \text{US dollars } \$ 500.5$$

She will get US dollars \$ 500.5 after exchanging the remaining Ugandan shillings

M4-1

M4-1

M4-1

A4-1

A4-1

Item 6

To determine the quantity of porridge in litres each child student will be served

Surface area of the container = $96,000 \text{ cm}^2$.

Volume of the container = $128,000 \text{ cm}^3$.

Surface area of larger container = $150,000$.

Volume of the larger container = ??

Using Linear scale factor, Area scale factor and Volume scale factor.

$$A \cdot S \cdot F = (L \cdot S \cdot F)^2$$

$$\frac{\text{Area of bigger container}}{\text{Area of smaller container}} = (L \cdot S \cdot F)^2$$

$$\text{A} \quad \frac{150,000}{96,000} = (L \cdot S \cdot F)^2$$

$$\frac{25}{16} = (L \cdot S \cdot F)^2$$

$$L \cdot S \cdot F = \frac{5}{4}$$

But $(L \cdot S \cdot F)^3 = V \cdot S \cdot F$.

$$(L \cdot S \cdot F)^3 = \frac{\text{Volume of larger container}}{\text{Volume of smaller container}}$$

$$\left(\frac{5}{4}\right)^3 = \frac{V_L}{128,000}$$

$$\frac{125}{64} = \frac{V_L}{128,000}$$

$$V_L = \frac{125 \times 128,000}{64}$$

$$V_L = 250,000 \text{ cm}^3$$

$$\begin{aligned} \text{Volume in Litres} &= \left(\frac{250,000}{1000}\right) \text{ L} \\ &= 250 \text{ Litres.} \end{aligned}$$

$$\begin{aligned} \text{Quantity of porridge for each child} &= \frac{250}{500} \\ &= 0.5 \text{ Litres.} \end{aligned}$$

Each child student will be served 0.5 litres of porridge if the caterer gets the larger container.

M₄₋₁

M₄₋₁

A₄₋₁

Tr. AB 1917

M₄₋₁

M₄₋₁

M₄₋₁

M₄₋₁

M₄₋₁

M₄₋₁

M₄₋₁

A₄₋₁

To compute the net income

$$\text{Taxable income} = \text{Gross income} - \text{Total allowances.}$$

$$\text{Total allowances} = \text{Transport allowance} + \text{Housing allowance} + \text{Lunch allowance} + \text{Utilities allowance}$$

$$= 115,500 + 81,150 + \left(\frac{10}{100} \times 853,500\right) + 35,500.$$

$$= 115,500 + 81,150 + 85,350 + 35,500$$

$$= \text{Shs. } 317,500$$

$$\text{Taxable income} = 853,500 - 317,500$$

$$= \text{sh. } 536,000$$

Income tax.

Stage	Taxable income	Income tax.
1	$105,000 - 0 = 105,000$	0
2.	$250,000 - 105,000$ $= \text{sh. } 145,000$	$\frac{13}{100} \times 145,000 = \text{sh. } 18,850$
3	$350,000 - 250,000$ $= \text{sh. } 100,000$	$\frac{20}{100} \times 100,000 = \text{sh. } 20,000$
4	$450,000 - 350,000$ $= \text{sh. } 100,000$	$\frac{30}{100} \times 100,000 = \text{sh. } 30,000$
5	$536,000 - 450,000$ $= \text{sh. } 86,000$	$\frac{40}{100} \times 86,000 = \text{sh. } 34,400$

$$\text{Income tax} = 18,850 + 20,000 + 30,000 + 34,400$$

$$= \text{sh. } 103,250.$$

$$\text{Net income} = \text{Gross income} - \text{Income tax.}$$

$$= 853,500 - 103,250.$$

$$= \text{sh. } 750,250.$$

The Net income of the cook is sh. 750,250.

END

TR. ABLAIR (0704772731)