

PROPOSED GUIDE WAKISSA

2024

⑤

MATH 456/1 ITEM I

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$$9 \text{ heaps} \times 8 \text{ tomatoes per heap} = 72 \text{ tomatoes}$$

$$(9 \text{ heaps}) \text{ cost} = 9 \times 2000 = \text{Ug} \times 18,000$$

$$\text{Discount} = \frac{5}{100} \times 18,000$$

$$= \text{Ug} \times 900$$

$$\text{Paid} = 18,000 - 900$$

$$= \text{Ug} \times 17,100$$

$$\text{No. of heaps in four} = \frac{9 \times 8}{4} = \frac{72}{4} = 18 \text{ heaps.}$$

Each heap of 4 was sold at = Ug x 1200

$$18 \text{ heaps of } 4 \text{ was sold at} = \text{Ug} \times 1200 \times 18 \\ = \text{Ug} \times 21,600$$

$$\text{Gross profit} = \text{s.p} - \text{c.p}$$

$$= 21,600 - 17,100$$

$$= \text{Ug} \times 4500$$

Visiting the National park; (Queen Elizabeth)

$$1. \text{ Uncle Visit: Uncle + 3 children} = \text{Ug} \times 17,000 \text{ for ticket.}$$

$$2. \text{ Mr. & Mrs Mukasa ; Mr & Mrs Mukasa + child} = \text{Ug} \times 14,000$$

for ticket
V.I. 2024, June

$$3. \text{ She visit} \quad 2024 \text{ dec, Market vendor + husband + 5 children} = \text{Ug} ?$$

(Market vendor)

$$\text{Let } p = \text{amount paid by the adult for ticket}$$

$$c = \text{amount paid by the child for the ticket}$$

Using help Uncle's family;

$$1p + 3c = 17000 \quad \text{--- (1)}$$

Mr. & Mrs Mukasa;

$$2p + 1c = 14000 \quad \text{--- (2)}$$

Market vendor;

$$xp + 5c = y$$

Let y be the amount the market vendor will pay for the ticket for the trip.

Equations ① and ② (solving)

$$p + 3c = 17000$$

$$2p + c = 14000$$

from eqn ① $p = 17000 - 3c$ ————— ③
substitute p in eqn ③ into ②

$$2(p) + c = 14000$$

$$2(17000 - 3c) + c = 14000$$

$$34000 - 6c + c = 14000$$

$$34000 - 14000 = 5c$$

$$c = 24000 \text{ Ugx}$$

$$p = 17000 - 3c$$

$$= 17000 - 3(24000)$$

$$p = 17000 - 72000$$

$$p = 5000 \text{ Ugx}$$

$$\text{She needs} = 2p + 5c$$

$$= 2 \times 5000 + 5 \times 4000$$

$$= 10000 + 20000$$

$$= 30000$$

= Ugx 30,000 for the ticket

- ITEM 2
- Super free express bus company.
- Minibus
16 passengers @ trip

- Bus 64 passengers @ trip.

Let x be the no. of trips made by minibus
 y " " " " " " " " Bus.

Forming Inequalities:

$$16x + 64y \leq 400$$

$$2x + 8y \leq 50 \quad \text{--- --- i}$$

$$x \leq 6 \quad \text{--- --- ii}$$

$$y \geq 2 \quad \text{--- --- iii}$$

$$x > y \quad \text{--- --- iv}$$

$$40,000x + 90,000y < 360,000 \text{ p}$$

$$4x + 9y \leq 36 \quad \text{--- --- v}$$

Drawing the inequality graph.

1. for $2x + 8y \leq 50$; $2x + 8y = 50$ (solid)

x	5	25
y	0.5	0

2. $y \geq 2$; $y = 2$ (solid)

3. $x \leq 6$; $x = 6$ (solid)

4. $x > y$; $x = y$ (broken)

5. $4x + 9y \leq 36$; $4x + 9y = 36$ (solid)	x	9	0
	y	0	4

Points to be selected from the graph;

Viable points $(4, 2)$ and $(3, 2)$.

$$16x + 64y \leq 400 \text{ (no. of student)}$$

for $(4, 2)$

$$16 \times 4 + 64 \times 2 \leq 400$$

$$64 + 128 \leq 400$$

$$192 \leq 400$$

The fr will transport only 192 student. Better to maximize no of st.

for (3,2) $16x + 64y \leq 400$

$$16 \times 3 + 64 \times 2 \leq 400$$

$$48 + 128 \leq 400$$

$$176 \leq 400$$

The fr will transport only 176 student. It's better in minimising no of st's transported.

For costs

Hence the teacher to maximize the no of trips. Then we should use 4 trips of minibus and 2 of Bus while to minimize use 3 min but ad 2 bus.

To R cost

$$40,000x + 90,000y \leq 360,000$$

for (4,2) $160,000 + 180,000 \leq 360,000$

$$340,000 \leq 360,000;$$

for (3,2) $40,000 \times 3 + 90,000 \times 2 \leq 360,000$

$$120,000 + 180,000 \leq 360,000$$

$$300,000 \leq 360,000;$$

Hence maximum no of students to be transported is 192 at a cost of $\text{Rs } 340,000$. Using 4 trips of minibus and 2 trips of buses.

UGANDA NATIONAL EXAMINATIONS BOARD

(To be fastened together with other answers to paper)

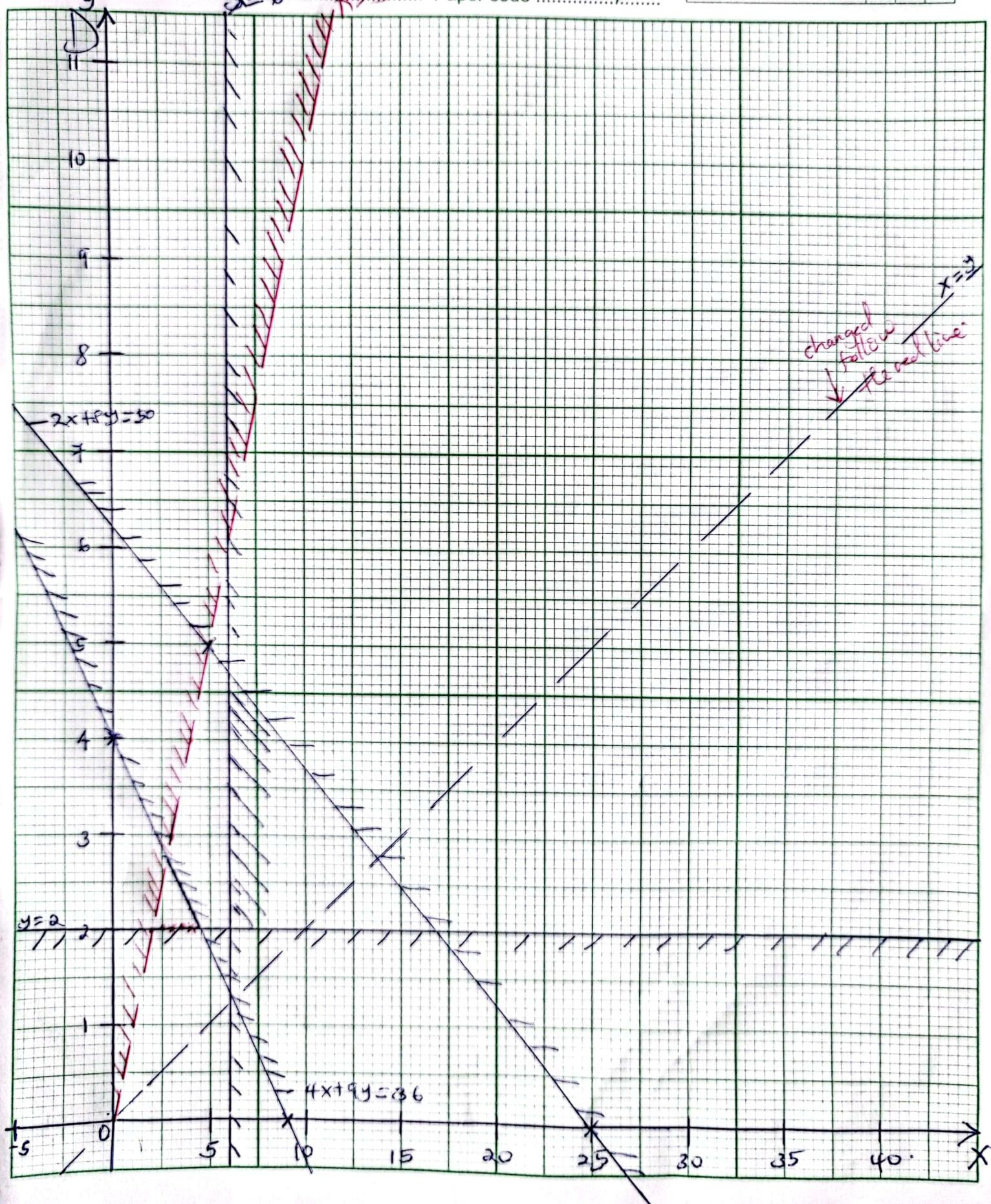
Candidate's Name

Signature

Subject Name $x=6$ Paper code /

UACE

Random No.				
Personal Number				



ITEM 3

Sports uniform = Ugx 38000
 Cabbage bought = Ugx 800 @

Group A = Cabbages whose weight is below average weight
 Group B = cabbages whose weight is above average.

Group A	sold at each
Group B	Ugx 1350
Lowest weight	Bigest weight
61	113

Weight (grammes)	Tallies.	frequency	\bar{x}	$f\bar{x}$	c-f
60 - 69		4	64.5	258	4
70 - 79		4	74.5	298	8
80 - 89	## / /	7	84.5	591.5	15
90 - 99	### / / / /	13	94.5	1228.5	28
100 - 109	### / / / / / / / /	18	104.5	1881	46
110 - 119		4	114.5	458	50
sum		= 50	#	= 4715	

a) Average weight of Cabbages = $\frac{\sum f\bar{x}}{\sum f} = \frac{4715}{50}$

= 94.3 grammes
 Is the average weight of the cabbages.

b) Group A = 21 cabbages
 Group B = 29 Cabbages.

Total buying. cost = $50 \times 800 = \text{Ugx } 40,000$

$$\text{Sales from group A} = 21 \times 1350 \\ = \text{Ug} \times 28,350$$

$$\text{Sales from group B} = 29 \times 1650 \\ = \text{Ug} \times 47,850$$

$$\text{Total sales} = \text{Ug} \times 76,200$$

E) Price of Sports wear (Uniform)

$$= \text{Ug} \times 38,000$$

$$\text{Profit Made} = \text{Ug} \times 76,200 - \text{Ug} \times 40,000 \\ = \text{Ug} \times 36,200$$

He can't meet his goal; If you compare the price of the sports uniform and the profits made here there is a deficit of $\text{Ug} \times 1,800$

ITEM 4

Item	Price
Beans	4000
Sugar	3500
Pulses	2400

Monday and Thursday.

	Week 1			Week 2		
	Beans	Sugar	Pulses	Beans	Sugar	Pulses
Monday	2	2	3	2	3	4
Thursday	3	0	4	2	1	5

Total amount of consumables in kg

$$= \text{week 1} + \text{week 2}$$

$$= \begin{pmatrix} 2 & 2 & 3 \\ 3 & 0 & 4 \end{pmatrix} + \begin{pmatrix} 2 & 3 & 4 \\ 2 & 1 & 5 \end{pmatrix}$$

$$= \begin{pmatrix} 4 & 5 & 7 \\ 5 & 1 & 9 \end{pmatrix}$$

So for the two weeks, I picked 9kg of beans, 6kgs of sugar and 16kg of pulses.

b) Total amount to be paid.

$$= \begin{pmatrix} 4 & 5 & 7 \\ 5 & 1 & 9 \end{pmatrix} \begin{pmatrix} 4000 \\ 5500 \\ 2400 \end{pmatrix} = \begin{pmatrix} 16000 + 27500 + 16800 \\ 20,000 + 5500 + 21600 \end{pmatrix}$$

$$= \begin{pmatrix} 60,300 \\ 47,100 \end{pmatrix} \begin{matrix} \xrightarrow{\text{Wk 1}} \\ \xrightarrow{\text{Wk 2}} \end{matrix} = 107,400 \text{ (Total)} \\ (\text{Amount must pay})$$

Since my aunt told me not to exceed $Ug \times 100,000$, it means I have not fitted in the plan.

I used = 107,400

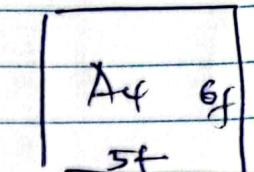
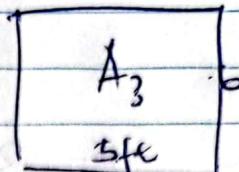
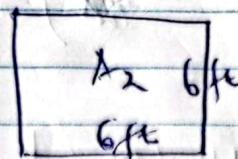
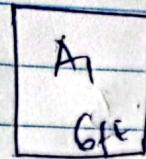
And = 100,000

7400

I exceeded the budget

by 7400

Four walls to be tiled



$$\text{Total area (m}^2\text{)} = A_1 + A_2 + A_3 + A_4.$$

$$1 \text{ ft} = 0.305 \text{ m}$$

$$= (1.83 \times 1.83) + (1.83 \times 1.83) + (1.83 \times 1.525) + (1.83 \times 1.525)$$

$$= 3.3489 + 3.3489 + 2.7908 + 2.7908$$

$$\text{Total area} = 12.2794 \text{ m}^2$$

1 box of tiles covers space of = 1.5

$$\text{No. of boxes of tiles} = \frac{12.2794}{1.5}$$

$$= 8.1863 \approx 8.2 \text{ boxes.}$$

1 Box of tiles costs $\text{Rs } 32,000 \text{ / box}$
⇒ 8.2 boxes = $32,000 \times 8.2$
= $\text{Rs } 262,400 \text{ / box}$

$$\text{Labour & tool per m}^2 = \text{Rs } 9000$$

$$\text{Total cost} = 9000 \times 12.2794$$
$$= \text{Rs } 110,514.60$$

$$\text{Other expenses} = \text{Rs } 200,000$$

Total money to be borrowed
= $262,400 + 110,514.6$
= $\text{Rs } 372,914.60$

$$\text{Principle becomes } = \text{Rs } 372,914.60$$

$$\text{Rate} = 5\%$$

$$\text{Amount} = P \left(1 + \frac{R}{100}\right)^n$$

$$= 372,914.60 \left(1 + \frac{5}{100}\right)^{1.5}$$
$$= 372914.60 (1.05)^{1.5}$$
$$= 372914.60 \times 1.05125$$
$$= 393,818.38$$

He is to pay 401,230 shillings back

Interest 8.8% Δ 8.81.8

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MATT DEPT
B.W.M.S.S.

ITEM 6

TO BE FORWARDED VERY SOON
① CDI Kamioada.