

**456/1**  
**MATHEMATICS**  
**Paper 1**  
**Jan/Feb 2025**  
 $2\frac{1}{4}$  hours

Released on:  
2<sup>nd</sup> January 2025



**MATHS LEARNERS UGANDA EXAMINATIONS**

**Uganda Certificate of Education**

**MATHEMATICS**

**Paper 1**

2 hours 15 minutes

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**INSTRUCTIONS TO CANDIDATES:**

*This paper consists of **two** sections; **A** and **B**. It has **six** examination items.*

*Section **A** has **two** compulsory items.*

*Section **B** has **two** parts; **I** and **II**. Answer **one** item from each part.*

*Answer **four** examination items in all.*

*Any additional item(s) answered will **not** be scored.*

***All** answers **must** be written in the Answer booklet(s) provided.*

*Graph Paper is provided.*

*Silent, non-programmable scientific calculators and mathematical tables with a list of formulae may be used.*

## SECTION A

*Answer all items in this section.*

### Item 1

A school in Kampala is organizing a fundraising event this weekend in which all parents and well-wishers are invited to attend. They plan to sell handmade crafts to raise funds that will be used in the painting of the four faces of the wall of the rectangular dining hall with a base of dimension 8m by 10m and height 7m. The school has 120 crafts. They plan to sell each craft for 5,0000 Ugandan Shillings (UGX) since the painting of every  $2m^2$  will cost UGX10000. The crafts are labeled with numbers 243 in base-5 and Out of the crafts,  $\frac{3}{5}$  are made by students, 10% of the remainder are made by non-teaching staffs and the rest by teachers. All the parents cannot interpret the labels on the crafts but they can if the labels are in binary. The cost of materials for each craft is 1,250.75 UGX.

#### Task:

- Help the parents and the well-wishers to interpret the label on the crafts
- Determine whether or not the school will be able to raise enough funds to paint the dining hall.

### Item 2

your community center has organized an open house event for next Saturday. The center plans to create a garden area in the shape of a rectangle with dimensions of  $(2y + 5)$  meters in length and  $(y + 4)$  meters in width. This garden area will be beautifully landscaped and will cover an area of  $4800m^2$  within the community grounds. Additionally, the center intends to build a decorative fence around this garden, which will take the form of a rectangle with dimensions of  $(2y + 15)$  meters in length and  $(y + 10)$  meters in width. The cost to construct one meter of this decorative fence is UGX 1200000. The entire fenced area will occupy an area of  $9600 m^2$  on the community grounds.

#### Task

- determine the dimension of the garden.
- determine the cost of constructing the fence.

**Turn Over**

## SECTION B

*This Section has two Parts; I and II*

### Part I

*Answer **one** item from this part*

#### Item 3

The chairperson of a saving group informed all the members of the group earlier about start time of their meeting. The table below shows the time in minutes taken by members of the group to arrive to the venue for the meeting from 9:00am;

65	61	45	55	52	48	45	58
46	55	66	49	68	62	63	47
63	62	53	58	52	64	50	63
52	56	58	46	60	57	59	66
68	52	51	61	55	56	67	56

The chairperson would like to know the time that meeting should start.

#### Task

- As a student who has learnt statistics, advise the chairperson on the exact time the meeting should start. Give a reason to support your advice.
- Determine the time taken by 65% of the members to arrive to the venue for the meeting.

#### Item 4

On a Monday morning, Mr. Ogwang, a dedicated mathematics teacher, instructed his senior four students to come prepared for class with essential scholastic materials. He emphasized the benefits of having pens, books, and rulers during their mathematics lessons. Eager to comply with their teacher's request, three senior four students, Martin, Brian, and Bernard decided to visit a nearby supermarket to buy the items. At the supermarket, Martin bought 3 pens, 5 books, and 4 rulers. Brian also bought 4 pens, 3 books, and 2 rulers while Bernard bought 4 pens, 8 books and 3 rulers. At the supermarket, each pen costs Shs1500, each book is priced at Shs8800, and each ruler costs Shs2500. Mr. Ogwang asked them to report back with their receipts to discuss how much they spent collectively on their scholastic materials.

#### Task

**Turn Over**

- a) As a student who has studied matrices, help the students to present their receipts to Mr. Ogwang.
- b) Joanitah is a senior three student, she needs to seek information on the amount of money she can spend on buy 8 pens, 3 dozens of books and 4 pairs of rulers. Help Joanitah with the necessary information if she will be given a discount of 10% on the price of each item.

## Part II

*Answer one item from this part.*

### Item 5

Joshua recently purchased a hemispherical-topped container that holds ice cream from Kampala town for his ten children. The container is made up of a cylindrical tin that is 12 cm in diameter and 15 cm in height, as seen below.



Joshua plans to distribute the whole ice-cream to his 10 children in equal cones having the same radius as that of the cylindrical tin. He needs to know the amount of ice-cream each child will get so that there is no amount of ice-cream left in the container. The container's outside is painted as shown above.

### Task

- a) Help Joshua to determine the amount of ice-cream each child will get.
- b) How much paint was used in painting the container?

### Item 6

Your father, Mr. Amenu is the chairperson Local Council one of your village. He was sent by the local government to measure the area of the swamp near the village to help in planning the location of the farm that the government wants to construct in the village. He rode his bicycle to go and measure the swamp whose area of  $75km^2$  can be represented on a map as  $12cm^2$ . Your father later sold the bicycle at UGX450,000, making a loss of 25%. The government wants to construct a triangular farm whose two sides 80m and 60m form a right angle with a circular fence that passes through all the three end points of the

farm. The government will plant grasses inside the circular fence but outside the farm to make it more attractive.

**Task**

- a) Determine the scale of the map used in measuring the swamp.
- b) Find the cost price of the bicycle.
- c) Make an accurate diagram of the farm.
- d) Calculate the area that will be covered by the grasses.

**END**

**Prepared by Sam Ogwang Otema;**

Receive more question papers and their answers through the WhatsApp group on: **0750900271** or scan the code below.

