



For Mock Exams and any Inquiry

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PRE REGISTRATION EXAMINATIONS 2024
Uganda Certificate of Education
MATHEMATICS
2 Hours and 15 minutes

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
- Graph paper is provided

SECTION A

Answer all items in this sections

Item 1

Elimu school bought 25 textbooks and 35 exercise books for Ugsh 135,000 from Kampala General bookshop. From the same bookshop Soma school bought 21 textbooks and 38 exercise books and spent Ugsh 13,000 less than Elimu school.

However, in Soroti cheap bookshop the cost of a text book was 5% less and that of an exercise book was 5% more than in Kampala General bookshop.

Mengo school bought the same number of textbooks and exercise books as Elimu school in Soroti cheap bookshop.

Task

- a) As a senior four student, help Elimu school and Soma school to find out the price of each item in Kampala general bookshop.
- b) What is the difference in the amount spent by Mengo school and Elimu school?

Item 2

Mr. Waguwenda is a business man who deals in an agricultural produce business. He visited four markets in week two of the month of March 2024.

In Nakasero market (N), he bought 3 bags of beans, 5 bags of maize, 10 bags of potato and 3 bags of millet.

In Gayaza market (G), he bought 1 bag of beans, 4 bags of potatoes and 2 bags of millet.

In Jinja market (J), he bought 4 bags beans, 3 bags of maize, 6 bags of potatoes and 1 bag of millet.

In Masaka market (M), he bought 5 bags of beans and 1 bag of maize.

Mr. Waguwenda bought each bag of beans at Shs. 45000, a bag of maize at Shs. 30000, a bag of potatoes at Shs. 15000 and a bag of millet at Shs. 50000.

However, since he is a business man, he later sold off all the produce he had bought at Shs. 50000 per bag of beans, Shs. 35000 per bag of maize, Shs. 18000 per bag of potatoes and 55000 per bag of millet.

Task

- Assist Mr. Waguwenda to summarize the above information in matrix form.
- Using your knowledge of matrix multiplication help him to know the amount of money spent on the produce in each market.
- With clear evidence, help him to know whether he made a loss or profit.

SECTION B

This section has two parts I and II

Answer **one** item from each part

Part I

Item 3

The government of Uganda through Mulago hospital carried out free medical checkup for its state ministers in order to enable them attend the Allied Membership meeting (NAM) which took place in Uganda at the start of the year 2024.

However, each Minister was weighed and the masses of those who attended the medical health function were recorded as follows.

64	58	52	73	62	50	60	64
49	47	58	45	58	74	66	73
48	46	55	52	51	69	59	44
60	42	48	54	73	61	58	50
41	53	54	46	43	61	67	70

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Task

- Form a frequency distribution table using classes of size 5 and starting with class of 40-44
- Giving a reason, based on the statistics calculation. What do you think was the average weight and most appearing weight.
- Assuming you're the medical doctor who carried out the test, Represent the information on a statistical graph to obtain the modal weight.

Item 4

Mr. Livingstone is a very rich man in Mbarara city where he has constructed 36 houses.

He wants to paint his houses by either green, white or black colour. Of these, 10 houses must have to be painted with Green colour and 6 houses must be painted by black colour. The 5 houses must be painted with green and white, 8 white and black and 4 houses must be painted with green and black.

All houses which are painted white are three more than those which are pointed black.

Task

- a) Determine the number of houses that were pointed with all the three different colours.
- b) Determine the number of houses painted with at least one of each of the three colours.
- c) If the house is picked at random, what is the probability that it is a black or white only.

Part II**Answer one item from this part****Item 5**

A group of students from Nairobi University agreed to contribute equally to buy mathematical calculators worth Ksh 1200 for a school library.

Five students pulled out and so the others agreed to contribute an extra Shs 10 each. Their contributions enabled them to buy calculators worth Shs. 200 more than they originally expected.

Task

- a) If the original number of students was X , write an expression of how much each was originally to contribute.
- b) Write down two expressions of how much each contributed after the five people pulled out.
- c) Calculate the number of people who made the contribution and find out how much did each contribute.

Item 6

A ship leaves port M and sails on a bearing of 050° heading towards island L. Two Navy destroyers sail from a naval base N to intercept the ship. Destroyer A sails such that it covers the shortest distance possible. Destroyer B sails on a bearing of 200° to Island L. The bearing of N from M is 100° and the distance $NM = 300\text{km}$

Task

Using a scale of 1cm to represent 50km;

- a) Determine the position of M, N and L
- b) Find the direction of N from L.
- c) Find the distance travelled by destroyer B.

END

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