JINJA SENIOR SECONDARY SCHOOL EXAMINATIONS 2025

Uganda Certificate of Education

S.4 PRE REGISTRATION EXAM 2026

MATHEMATICS

Paper 1

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**. Respond to **one** item from each part.

Answer **four** examination items in all.

Graph paper is provided.

Silent non programmable calculators may be used.

Do not tie your question papers on the answer sheets.

SECTION: A

Answer all items in this section.

Item 1.

Your School is hosting an inter-school regional tournament for players of football and netball. The host school has received 132 football players and 108 netball players. Each group should be divided into equal teams with no remainder. The organizing and planning committee needs to know the largest number of equal teams they can form for different games.

The committee has purchased 1,260 medals that need to be packed evenly in either boxes of 8 or 9 for easy transportation. The committee needs to choose only one box to pack in the medals. The district sports department has donated a total of one thousand six hundred eight water bottles to be distributed among the three main groups: two twelfths of the water bottles go to the committee, 0.58 goes to the players, and the rest go to the volunteers. The committee needs help in distributing the water bottles.

Task:

Help the organizing and planning committee to determine:

(a) (i) How many large equal teams can be formed for each game?

(ii) How many players will be in netball team?

(b) What pack should they use to pack the medals? (Justify your response).

(c) How many water bottles will the volunteers receive from the districts sports department? (Give your response to the nearest hundred.)

Item 2.

Your teacher has a rectangular garden that has a length that is 4m more than twice it's width. The area of the garden is 96 square metres and your teacher needs to know the actual dimensions of the garden. He wants to construct a house in the garden and has the following information; Edgar bought 50 iron sheets and 20 bags of cement at a total cost of Shs.5,000,000 while Evelyn bought 25 iron sheets and 30 bags of cement at a total cost of Shs.3,200,000. They both bought these items from the same shop near the garden that is to be constructed. Your teacher wishes to buy 40 more iron sheets and 30 bags of cement.

Task:

(a) Help your teacher to determine the;

(i)Dimensions of his garden.

(ii) Distance around his garden.

(b) How much does you teacher need to prepare to buy the extra iron sheets and cement?

SECTION B.

This section has two parts I and II

PART I

(Answer one item from this part)

Item 3.

At the beginning of a new term a parent plans to make shopping of scholastic materials for his 3 children A, B, C. He has made a budget basing on the list of requirements given by their class teachers.

Child A: 6 exercise books, 3 pencils, 2 graph books, 3 pens.

Child B: 3 pencils, 1 graph book, 6 exercise books, and 3 pens.

Child C: 2 graph books, 4 exercise books, 3 pencils and 5 pens.

At the time of making the budget, the parent considered prices as follows; 1 graph book @ Ugx.2,000, 1 pencil @ Ugx.100, 1 exercise book @ Ugx.1,500 and Ipen @ Ugx.500. So, the parent gave his children Ugx.200,800 for shopping scholastic materials and share the remaining money equally as pocket money. The children decided to buy from the school canteen and found out that the prices at the canteen had increased by 10% for each item, and the school administration said that each item listed should increase the number by 2 since the school plans to teach for extra two weeks after the closure of the term to cater for the lost time in the previous term.

Task:

(a) If the children were to buy items before going to school, using matrices help their father determine how much each child would have spent.

(b) Using matrices find how much each child spent to buy items from the school canteen.

(c) Help the children to determine how much each child would share as pocket money after buying items from the school canteen.

Item 4.

"Double M Companies' limited" is a company that deals in imports of vehicles from three countries Japan, Germany and Italy. The company wants to know the most liked vehicles so that it increases the number of vehicles imported from that country. The company also wants to start importing vehicles from China if the probability of customers who like vehicles from neither of the three countries they import from is greater than 0.35. The company decided to collect data fromthe customers who came to buy vehicles in a particular week and the following is the data collected.

Out of the 58 customers interrogated, 7 like vehicles from all the three countries. 24 like vehicles from Germany and 5 like vehicles from Italy only, 13 like vehicles from Japan and Germany, 16 like vehicles from Germany and Italy and 3 like vehicles from Japan only. 38 customers did not like vehicles from Japan.

Task:

(a) Basing on mathematical calculations, help the company to know the country from which it must increase the number of vehicles imported.

(b) Will the company start importing vehicles from China or not?

(c) How many customers liked vehicles from each of the countries Japan, Germany and Italy?

(d) What is the probability of selecting a customer who did not like a vehicle from Italy?

PART II

(Attempt any one item from this part)

Item 5.

A graphic designer was working on a company logo based on a simple triangle with corners at A(1,1), B(4, 1), and C(1,5) on a digital grid. As part of the design process, he first created a mirrored version of the triangle by reflecting it across the x-axis, resulting in a new triangle A'B'C' Then, to explore variations, he took this new triangle A'B'C' and enlarged it with scale factor -2 around the center of the grid (the origin) to get the final shape A″ B″ C″. She needed to know the precise locations of the corners of the transformed triangles and understand the overall effect of the two steps combined. The cost of this design per square centimeter is UGX. 240.

Task:

(a) Help the designer to know the exact coordinates of the two images.

(b) Describe a single geometric transformation that would map triangle ABC directly onto triangle A″ B″ C″.

(c) Determine the amount of money the designer will get from the image triangle A″ B″ C″.

Item 6.

Your brother is a carpenter and he has been contracted to make stools for a restaurant. According to the restaurant manager, the stools should have a round wooden top of radius 0.2m. the available pieces of timber are triangular of the adjacent sides are 60cm and 65cm which intersect at angle of 75°. Your brother is not sure if these pieces of wood can make the stool tops.

In a close discussion with the manager of the restaurant, he informed your brother about the benefits of being an employee at the restaurant. They provide housing allowance of UGX. 30,000 monthly, meals of UGX. 15,000 daily and accommodation of UGX. 200,000 per month. These allowances contribute to the gross pay UGX. 900,000 per month

However, they pay a tax as follows;

Taxable income (UGX.)	Tax rate (%)
0 - 100,000	Free
100,001 – 150,000	10
150,001 – 250,000	20
Above 250,000	30

Tasks:

(a) While the pieces of wood be able to produce the required stool tops? Give a reason for your answer.

(b) Determine the take home pay for an employee at the restaurant.

(c) What percentage of the employee's salary that goes to tax?

END