NAME: …… SIGNATURE: ……

456/1
MATHEMATICS
Paper 1
Nov, 2023
$1\frac{3}{4}$ Hours

MANDELA COLLEGE SCHOOL

Uganda Certificate of Lower Secondary Education

END OF YEAR EXAMINATIONS

S.2 MATHEMATICS

Paper 1

1 Hour 45 Minutes

INSTRUCTIONS:

- Attempt **all** questions in both sections of this paper.
- Write your answers **only** in the spaces provided. If you run out of space, use the additional page(s) at the back of the booklet to answer the questions, taking care to number the question(s) correctly.
- You may use a pencil for graphs and diagrams only.
- Use a black or blue ball point pen. Do not use a gel pen or correction fluid.
- Write your name and sign in the spaces provided at the top of this page.
- Take $\pi = 3.142$ or use the π button on your calculator.

INFORMATION:

- You should give details of your method of the solution whenever appropriate.
- Unless stated, diagrams are not drawn to scale.
- Scale drawing solutions will not be acceptable where you are asked to calculate.
- The number of marks is given in brackets at the end of each question or question part.
- You are reminded of the need for good English or orderly and clear presentation of your working.

ADDITIONAL MATERIALS:

- A list of Mathematical tables and formulae.
- A calculator will be required for this paper.
- A ruler, a graph, protractor and a pair of compasses may be required.

FOR EXAMINERS USE ONLY		
QUESTION	MAXIMUM MARK	MARK OBTAINED
1.	3	
2.	4	
3.	4	
4.	6	
5.	3	
6.	4	
7.	4	
8.	4	
9.	8	
10.	10	
TOTAL	50	

SECTION A

1. Jonathan knows that one of the angles of an isosceles triangle is 48°. He says that one of the other angles **must** be 66°. Explain why Jonathan is wrong.

(03 marks)

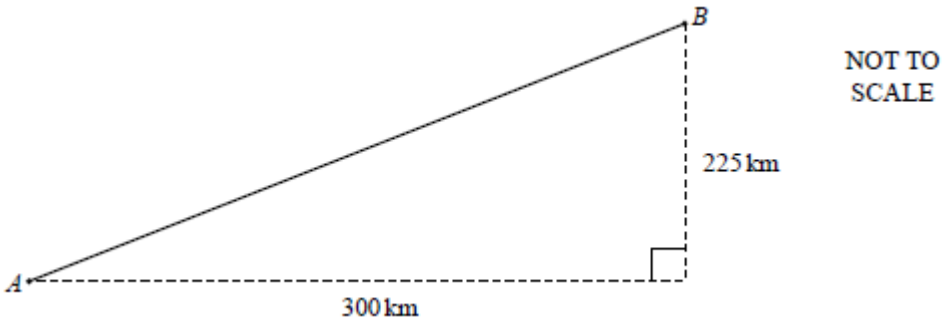
2. Christine buys a car at UGX.13000000. She later sells it at UGX.11500000. Calculate her percentage loss.

(04 marks)

3. Find the equation of a line which is parallel to the line $4x = 5 - y$ and passes through the point (1, -1). Give your answer in the form $y = mx + c$.

(04 marks)

4. The diagram below shows the path of a plane from airport *A* to airport *B*.



(a) Determine the distance between *A* and *B*.

(03 marks)

(b) The plane flies at an average speed of $450kmhr^{-1}$. It leaves *A* at noon and flies directly to *B*. Work out the time when the plane arrives at *B*.

(03 marks)

5. Mukasa wants to design a success card for his best friend Mubiru. He intends to design the card on a triangular piece of card board measuring $5cm$ by $8cm$ by $10cm$. In the space provided, help Mukasa to construct the template of his success card.

(03 marks)

6. 

The figure aside shows a bottle containing medicine. You can work out the amount of medicine $c\ ml$ to give a child by using the formula $c = \frac{ma}{150}$, where m is the age of the child in months and a is the dose of an adult. If the dose of an adult is $40\ ml$, calculate the amount of medicine you can give to a child whose age is 30 months.

(04 marks)

7. There are 30 students in a class. Of these, 15 take History, 18 take Geography and 5 take neither of these subjects. Use a Venn diagram to find the number of students who take both subjects.

(04 marks)

8. After dividing two numbers, Grace obtained 3.161616... as the quotient. Being a weak Mathematics student, Grace was discouraged by the many digits in her quotient. Help grace to express her quotient as a fraction in its simplest form.

(04 marks)

SECTION B

9. (a) (i) A certain school has an 'O' and 'A' section. The bell for changing lessons at the 'O' section rings every after 40 minutes while that at the 'A' section rings every after an hour. At both sections, lessons begin with the sounding of the bells at 7:20 a.m. Find the time when the bells ring together again.

(03 marks)

(ii) Juliet and her sister Justine to the supermarket to buy some sweets. The sweets come in two varieties, chocolate and vanilla flavour. The are 8 and 9 sweets in the chocolate and vanilla flavour packets respectively. They buy a packet of each flavour. When they reached home, they gave 3 vanilla flavoured sweets to their brother Joel and repacked the other sweets such that each packed contained the same number of sweets of each flavour. How many packets did they have?

(04 marks)

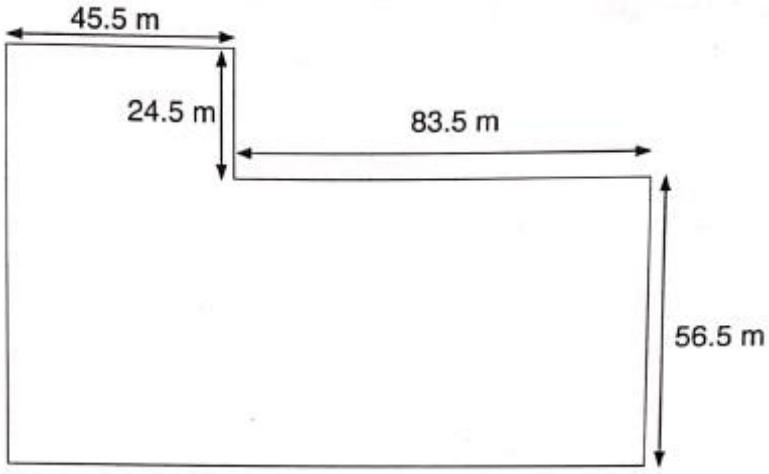
(b) Below is a list of numbers;

441 221 22251

Which ones of the numbers are divisible by 3? Show your working.

(02 marks)

10. The figure below shows the ground plan of Mr.Musoke's garden. The dimensions are given to the nearest metre.



Mr.Musoke intends to cover his garden with barbed wire of three strands. The wire is sold in rolls, each of length 21*m*. The cost of each roll is UGX.35000.
Mr.Mukasa is an illiterate farmer with little knowledge of Mathematics. Help him calculate the cost of the barbed wire required to fence his garden.

(10 marks)

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END