NAME: …… SIGNATURE: ……

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

MANDELA COLLEGE SCHOOL

Uganda Certificate of Lower Secondary Education

END OF YEAR EXAMINATIONS

S.3 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. A chess team consisting of 10 members scored the following points during the year.

   23 34 39 40 42 53 56 62 68 76

   Calculate the mean number of points scored by the team. Round your answer to one decimal place.

(03 marks)

2. Ian scores x marks in English, 30 more than that in Mathematics and $6x$ marks in the other subjects. He was ranked as the second best in a class where the best student scored 510 marks in total. Calculate Ian's total mark.

(04 marks)

3. When going to school, James can either walk or cycle. The probability that he cycles is $\frac{1}{5}$. There are 200 school days in a calendar year. Determine the expected number of days that James walks to in a calendar year.

(04 marks)

4. Annie invests UGX.830000 at a rate of 5.6% per year compound interest. Calculate the value of her investment after 6 years.

(03 marks)

5. Mukwaya bakes cakes to supply to supermarkets near his home. He measures the mass of his ingredients using a digital scale. Due to inflation in October, he decides to reduce the amount (in grams) of butter he uses to bake a king size cake. The scales below show the mass of butter he uses in January and in October during the period of inflation.

January

October

Calculate the percentage change in the mass of butter he uses.

(05 marks)

6. Jeremy is going to celebrate his son's birthday. The family members suggest the party to be in their dining room which measures 15 feet by 11 feet. Jeremy intends to wrap around the room with wallpaper border as shown aside. How many feet of wallpaper border does he need?

(04 marks)

7. The bearing of the washroom from the main hall is $120°$. Calculate the bearing of the main hall from the washroom.

(04 marks)

8. In a triangle, the longest side is $16cm$ and one other remaining sides is $8cm$. Find the length of the third side.

(03 marks)

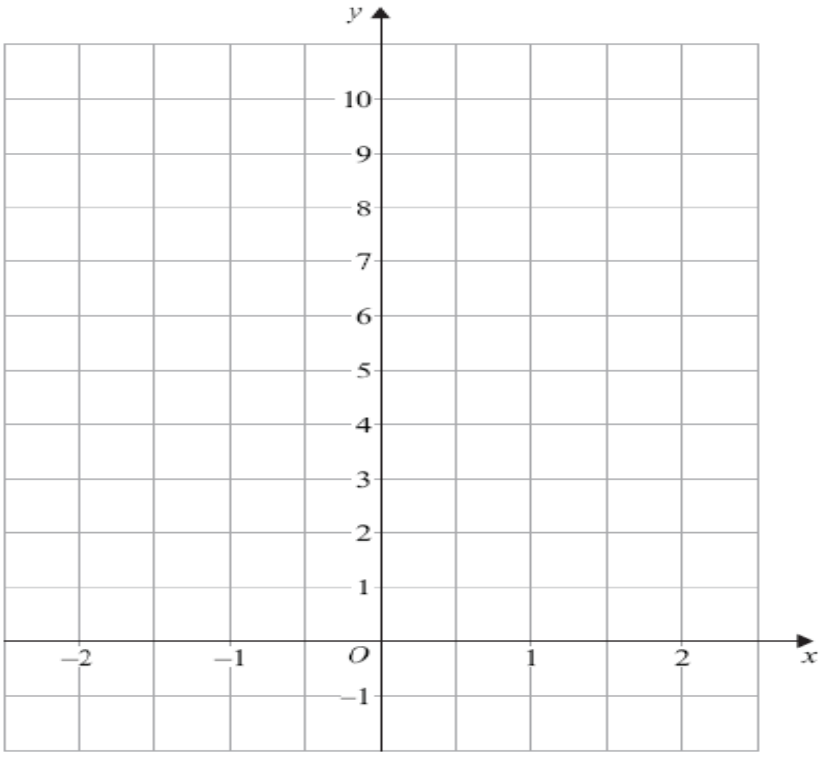
SECTION B

9. (a) A line is given by the equation $y = 2x + 1$. Complete the table of values below.

x	-2	-1	0	1	2	3
y		-1	1			

(02 marks)

(b) On the grid below, plot a graph of $y = 2x + 1$.



(05 marks)

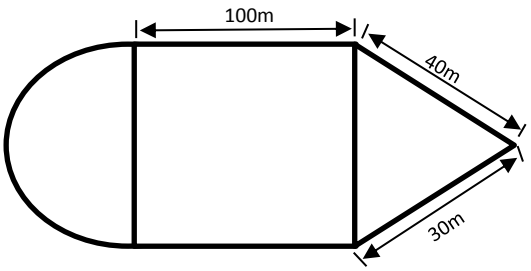
(c) Use your graph to find the value of;

(i) y when $x = -1.5$. $y =$.....

(ii) x when $y = 6$. $y =$.....

(03 marks)

10. Mukasa wishes to construct a perimeter wall around his plot of land. The land is semi circular at one end is a right-angled triangle. The middle part is rectangular as shown below.



The contractor charges a basic fee of UGX.230000 and UGX.12000 per running meter of the perimeter wall. Help Mukasa deduce the overall amount he will give the contractor.

(10 marks)

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END