MASAKA CITY EXAMINATIONS BOARD

MOCK EXAMINATION- 2023

MATHEMATICS

Time allowed: 2hours 15 minutes

RANDOM NO	PERSONAL NO

Candidate's name: …………………………………………………….

Candidate's Signature: …………………….…………………………..

School Random Number: ……………………………………..………..

Read the following instructions carefully:

1. This paper has two sections: **A and B**. Section A has **20** questions and **Section B** has **12** questions. The paper has **14 printed pages**

2. Answer **all** questions. **All** the working for both Sections **A** and **B** must be shown in the spaces provided.

3. **All** working must be done using a **blue** or **black** Ball point pen or **ink**. Any work done in pencil will **NOT** be marked except drawings and diagram.

4. Unnecessary **changes** in your work and hand writing that cannot be easily read may lead to **loss of marks.**

5. **No calculators** are allowed in the examination Room.

6. Do not fill anything in the table indicated "For examiners' use only" and the boxes inside the Question paper.

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Turn Over

1. Work out : $\dfrac{5}{8} - \dfrac{3}{8}$

2. Write the Roman numeral CXCVI in words

....

....

3. Express 405.6 in the standard form.

4. Given that P n Q= {a , e , f}. PUQ = {a , b , c , d , e , f, g} and Q$^\backslash$ = {b , c}. list the elements of set Q
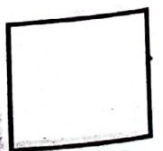
In the figure below , find the direction of P from Q
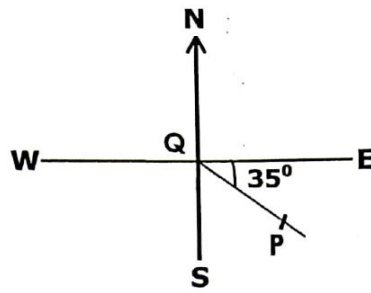
5. Find the range of the integers ⁻5 and ⁻3
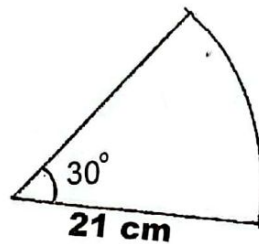
6. Group in threes and write the numeral represented in base three

    0   0   0   0   0

7. After covering $\frac{5}{12}$ of the journey, Sarah still had 84 km to go. How long was the whole journey?
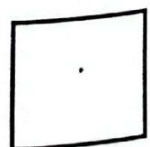
8. Solve for y in: $2^{3y} \div 2^5 = 2$

9. Work out the perimeter of the figure below (take $\pi = \frac{22}{7}$)

10. Find the square of the next number in the sequence below

2, 5, 7, 10, 12 ____

11. A business lady sold 93057 kg of ground nuts in a week. Write the kilograms sold in expanded form using values.

13. Given that $x=3$, $c=-5$ and $n=+2$, find the value of $x + (c - n)$

14. A Trader sold an article for sh. 60,000 making a profit of 20%. What was the cost price of the article?

15. A football match started at the time shown on the clock face. Express the evening time shown in the 24 hour clock
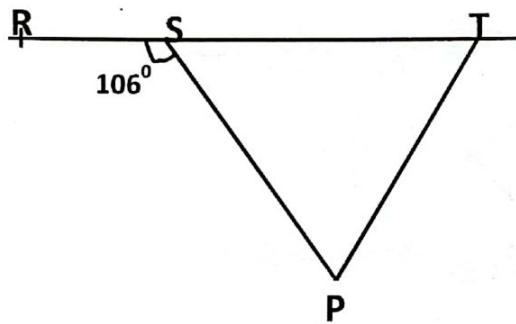

16. Suzan borrowed sh. 400,000 from a money lender at an interest rate of $2\frac{1}{2}\%$ per month for 1 year. Find the simple interest paid after 1 year.
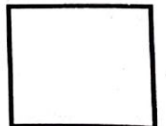
17. Solve: $\frac{1}{2} p_2 + 3 = 35$

18. A motorist covers a distance of 90 km between 12.15pm and 1:45pm. Find his speed in kilometers per hour.

19. In the diagram Ps =ST, find the size of the angle TPS

R _____ S _____ T
106^0
P

20. The average mass of 2 girls is 17 kgs, when three other girls join them the total mass becomes 115kg . Find the average mass of the three girls.
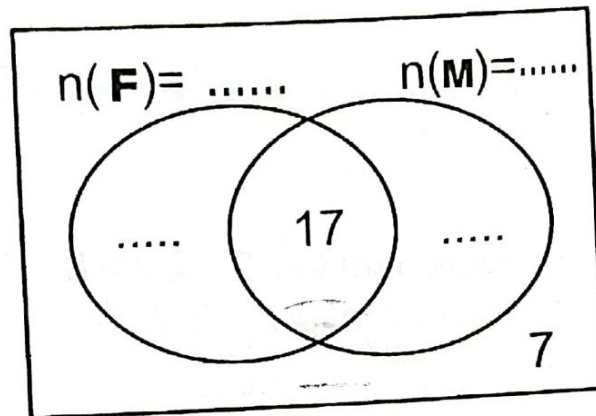
21. In a team of basket ballers, (3y - 2) ate only fish, 17 ate both meat and fish, (y + 6) ate only meat, 7 ate neither meat nor fish.

(02 Marks)

a. Complete the Venn diagram

b. Given that there are 6 more players who ate fish than meat, find the value of y.

(02 Marks)

c. Find the number of people who ate meat (01 Marks)

22.   a. Solve: $3(t-4)=3$ (02 Marks)

b.   Solve and find the solution set for: $2-2y>8$ (03 Marks)
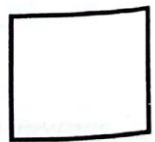
23. Work out : $\dfrac{6.2+0.05}{4.9-2.4}$ (03 Marks)

b. Simplify: $\dfrac{1}{2} \times \dfrac{2}{3} \div \dfrac{3}{4}$ (02 Marks)

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24. The table below shows how a rider moved from town M to town R.

Town	Arrival time	Departure time
M		7:15 am
N	8:00 am	8:20 am
Q	10:30 am	11:05 am
P	1:15 pm	1:30 pm
R	2:15 pm	

a) How long did the cyclist stay at Town Q?   *(02 Marks)*

b) Find how long the cyclist took to travel from Town N to town P
   (02 Marks)

c) How many stop-overs did the cyclist make?   02 Marks)

(01 Mark)

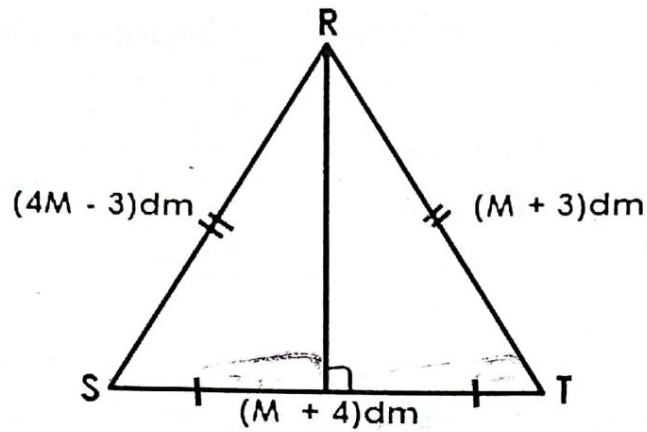25. (a). Work out : $\begin{array}{r} 1\ 0\ 0\ 1_{two} \\ -1\ 1\ 1_{two} \\ \hline \\ \hline \end{array}$

(03 Marks)

b. Find the value of x: $115_{eight} = 205_x$

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26. The figure below is an isosceles triangle use it to answer the questions.

a) Find the value of m. *(02 Marks)*

b. Calculate the area of the triangle STR. *(03 Marks)*

27. The interior and exterior angles of a regular polygon are in the ratio of 3:2 respectively.

a. Find the number of right angles of the polygon. (03 Marks)

b. Calculate the size of the interior angle of the regular polygon.
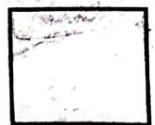(02 Marks)

28. In a fruit garden, $\frac{1}{4}$ of the fruit trees are oranges, $\frac{1}{2}$ of the remainder are mango trees and the remaining 90 trees are avocado trees.

a) Find the fraction of the avocado trees is the garden (02 Marks)

b) How many orange trees are found in the garden (03 Marks)

(02 Marks)

29. Simplify 4(k+1) -3 (k + 2)

b) Teddy is thirty eight years old and Joel is twenty four years old.

How many years ago was Teddy three times Joel's age? **(03 Marks)**

30. Using a pair of compasses and ruler construct a triangle **ABC** in which line, **AB**=6cm, angle **CAB** = 30^0 and angle **ABC**=120^0, Drop a perpendicular from **C** to meet **AB** at point **T**. **(05 Marks)**

(b). Measure line **CT** **(01 Marks)**

31. The tank below contains 3000 liters of water study it carefully and answer the question.

150 cm

200 cm
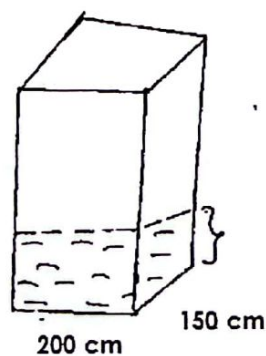
a) Calculate the height of the water in the tank.   (02 Marks)
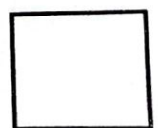
b) If the tank is $\frac{2}{5}$ full of water, how many litres are needed to fill up the tank?   (03 Marks)

32. A motorist travelled from Kampala to Mbale as follows: He left Kampala at 9:00 am and travelled for one hour to Jinja covering a distance of 80km. After a 30 minutes rest in Jinja, he continued to Tororo 120km in $1\frac{1}{2}$ hours.
In Tororo , he had a lunch break of 60 minutes , then continued to Mbale a distance of 40km arriving at 3:00pm.

          (03 Marks)

a) Show the motorist's journey on the graph below.

b) If the tank is $\frac{2}{5}$ full of water, how many litres are needed to fill up the tank? **(03 Marks)**

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   In Tororo, he had a lunch break of 60 minutes, then continued to Mbale a distance of 40km arriving at 3:00pm.

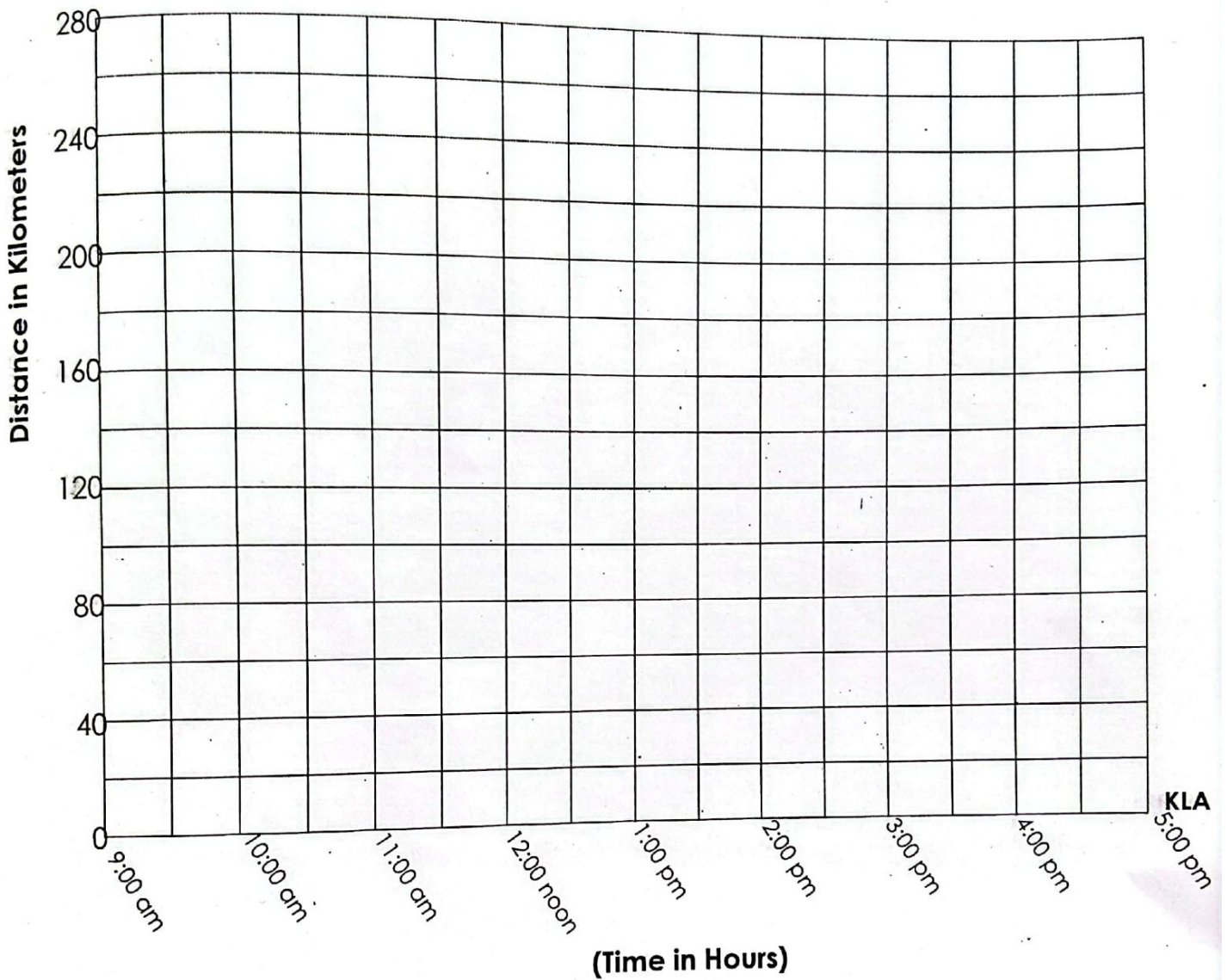   a) Show the motorist's journey on the graph below. **(03 Marks)**

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Distance in Kilometers (y-axis: 0, 40, 80, 120, 160, 200, 240, 280)

(Time in Hours) (x-axis: 9:00 am, 10:00 am, 11:00 am, 12:00 noon, 1:00 pm, 2:00 pm, 3:00 pm, 4:00 pm, 5:00 pm)

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(b). Calculate the motorists average speed for the whole journey.

(02 Marks)