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.

FOR EXAMINERS' USE ONLY		
Qn. No.	MARKS	EXR'S INITIAL
No 1-5 6-10		
11-15		
16-20		
21-22		
23-24		
25-26 27-28		
29-30		
31-32		
TOTAL		

Turn Over

SECTION A: 40 MARKS

*Answer **all** the questions in this section.*
*Questions **1** to **20** carry two marks each.*

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

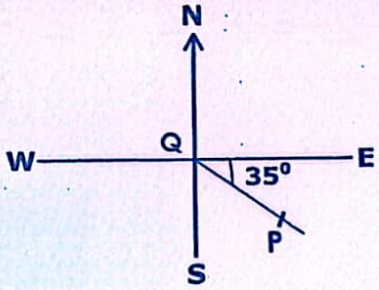
2. Write the Roman numeral CXCVI in words

.....
.....

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\ = {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 $^{-}3$

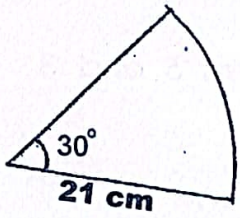
6. Group in threes and write the numeral represented in base three

   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: $2^{3y} \div 2^{5} = 2$ $2^{3y} \div 2^{5} = 2$

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?

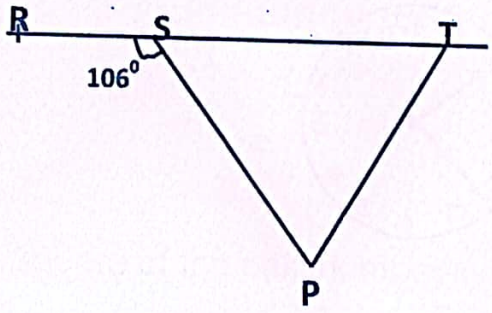
15. A football match started at the time shown on the clock face.
Express the evening time shown in the 24 hour clock

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: ~~$\frac{1}{2}p^2 + 3 = 35$~~ $\frac{1}{2}p^2 + 3 = 35$

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



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.

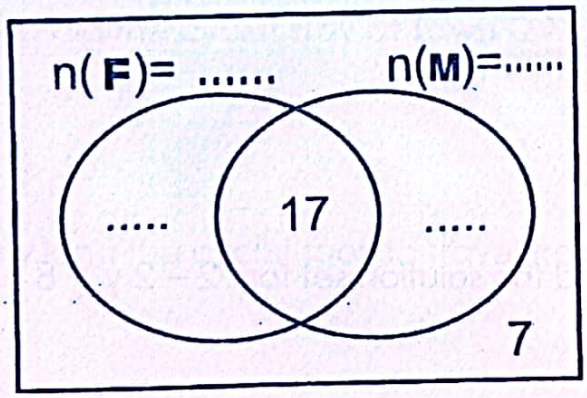
SECTION B: 60 MARKS

Answer all questions in this section

Marks for each question are indicated in brackets

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: $\frac{1}{2} \times \frac{2}{3} \div \frac{3}{4}$ *(02 Marks)*

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)*

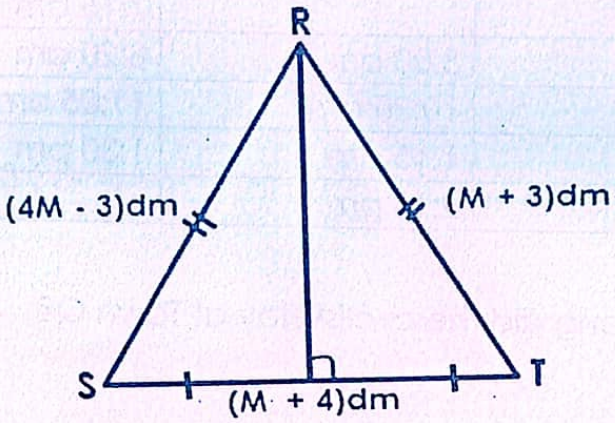
c) How many stop-overs did the cyclist make? *(02 Marks)*

25. (a). Work out : $1\ 0\ 0\ 1_{two}$ *(01 Mark)*

$-1\ 1\ 1_{two}$

b. Find the value of x: $1\ 1\ 5_{eight} = 205_{x}$ *(03 Marks)*

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)*

29. Simplify 4(k+1) -3 (k + 2) *(02 Marks)*

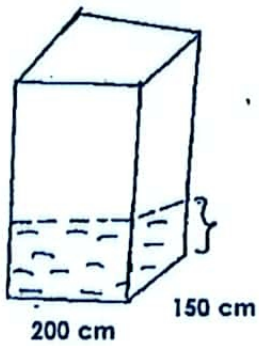
b) Teddy is thirty eight years old and Joel is twenty four years old.

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.

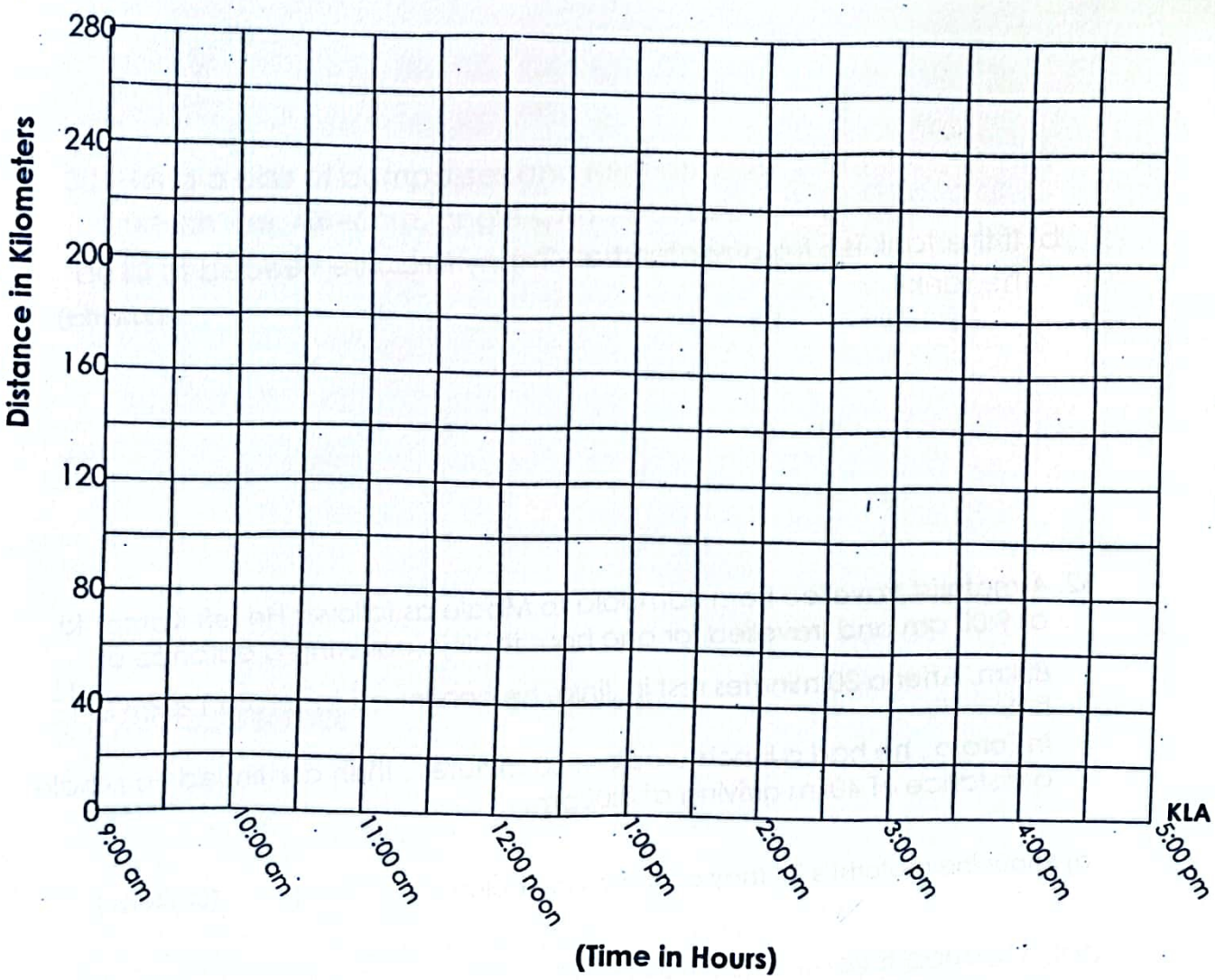


a) Calculate the height of the water in the tank. **(02 Marks)**

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.

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



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

(02 Marks)