

ENTEBBE PRIVATE SCHOOLS EXAMINATION ASSOCIATION



P.L.E. MOCK EXAMINATIONS, 2023

MATHEMATICS

Time allowed: 2 hours 30 minutes

INDEX NO.										
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Candidate's name: _____

Candidate's signature: _____

District Name: _____

SECTION A (40 MARKS)

1. Add: $1 + 99$

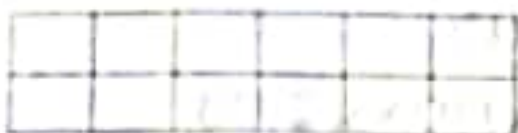
2. Simplify: $3a + b - 2a - 5b$

3. Given that: $K = \{p, r, o, m, i, s, e\}$ and $L = \{m, a, r, t, i, n, s\}$. Find $n(K \cap L)$

4. Express 30 m as a percentage of $\frac{1}{4}$ km

5. Write: Four hundred twenty three in Roman numerals.

6. Shade $\frac{3}{4}$ of the diagram below.



7. What number has been written in standard form: 6.37×10^{-3} ?

8. Workout: $33\text{m} \times 21\text{m}$

9. Find the square of the next number in the sequence below:

81, 27, 9, 3, 1, _____

10. 15 men can dig a garden in 8 days. How many less men are needed to dig the same garden in 10 days?

11. In a P.7 class, $\frac{3}{5}$ of the pupils are girls and the rest are boys. If there are 24 boys, how many pupils are in the class?

12. Using a ruler, a pencil and a pair of compasses only, bisect angle LMN in the figure below.



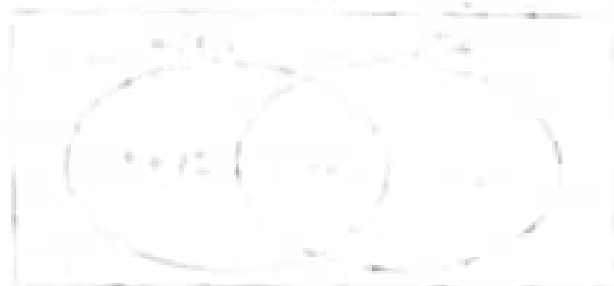
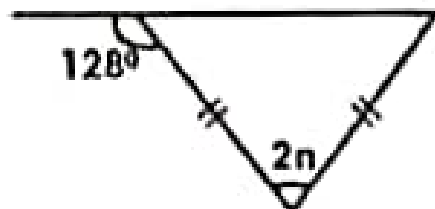
13. Factorise completely: $12a^2b - 18ab^2$

14. In Mbale Cinema hall, 150 more women than men attended a show. The ratio of male to female was 3:5 respectively. How many people attended the show?

15. Solve for q: $2^{2q} \times 2^2 = 64$

16. Find the number whose expansion is given below:
 $(2 \times 3^3) + (1 \times 3^1) + (2 \times 3^0)$

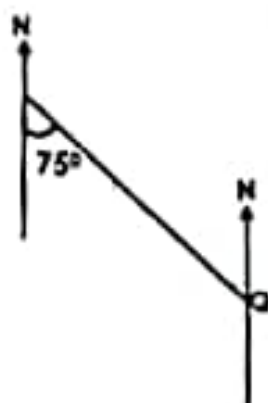
17. Find the value of n in the figure below.



18. The average weight of 5 boys is 20.8 kg and average weight of 3 of them is 22kg. What is the average weight of the two other boys?

19. A trader sold an article at sh.68,000 making a loss of sh.12,000. Calculate the trader's percentage loss.

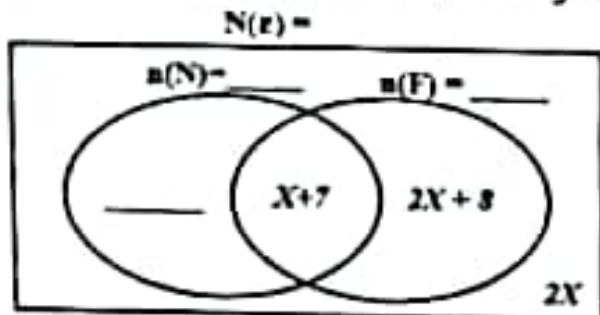
20. In the figure below, find the bearing of town P from town Q.



SECTION: B.

21. In a class, 31 pupils play only one type of game, $(3x + 3)$ pupils play football (F) only, $(x+7)$ pupils play both football and netball, $(2x+8)$ play netball (N) only and $2x$ play neither of the given games.

a) Represent the above information on the given Venn diagram below. (3 marks)

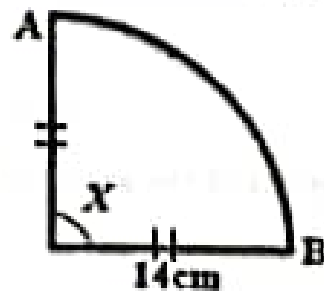


b) Find the value of x (2 marks)

22. (a) Express 0.233..... as a common fraction in simplified form. (2 marks)

b) Work out: $\frac{1.44 \times 3.6}{2.03 - 0.95}$ (3 marks)

23. Given that the area of the sector below is 154cm^2 and its radius is 14cm . Use it to answer the questions that follow,



a) Work out the value of x in degrees. (3 mark).

- b) Calculate the length of the arc AB (2 marks)

24. The table below shows the rates in Uganda shillings at which different currencies are bought and sold at a forex bureau. Study it carefully and answer the questions that follow. (2 marks)

CURRENCY	SELLING PRICE	BUYING PRICE
1 Kenya Shilling	UG.SHs 32	UG.SHs 30
1 US dollar	UG.SHs 3600	UG.SHs 3560

- a) How much will a trader from Uganda pay for a smart watch sold at Ksh. 25,000? (2 marks)

- b) How much Kenya shillings can one get with US \$ 400? (3marks)

25. a) If today is Wednesday 12th July, 2023. What day of the week will 18th September of the same year be? (3marks)

- b) Solve: $3m - 1 = 0$ (finite 7). (2marks)

26. The table below shows a journey by Y.Y buses from Kampala to Soroti.

TOWN	Arrival	Departure	Distance
Kampala		8:00am	0
Iganga	10:15am	10:25am	145Km
Mbale	11:50am	12:20pm	210Km
Soroti	4:30pm		340Km

- a) What time did the bus leave Mbale for Soroti in 24-hour clock? (1 mark)
- b) How far is Soroti from Iganga? (1 mark)
- c) Work out the average speed of the bus for the whole journey. (3 marks)

27. Town L is 400km from town M on a bearing of 075° and town N is 300km from town M on a bearing of 330° .

- a) Draw a sketch showing the three towns. (1 mark)

- b) If 1cm = 50km, draw an accurate diagram showing the three towns. (3 marks)



- c) What is the shortest distance between town N and town L? (1 mark)

28. The ratio of secondary schools to vocational schools to Primary schools in Entebbe Municipality is 4:1:7 respectively.

If there are 18 more Primary schools than Secondary schools,

- a) how many schools are in the Municipality? (3marks)

- b) What percentage of the schools are secondary schools? (2marks)

29. (a) Solve: $\frac{10}{y} + \frac{2y}{4} = \frac{12}{y}$

(3marks)

b) Given that $p = -2$, $q = 3$ and $r = 4$,

Find the value of $\frac{p + qr}{pr}$

(2marks)

30. A trader banked money in Finance Trust Bank which offers $3\frac{1}{4}\%$ interest rate per year. If her account had an amount of sh 182,100 after a period of 4 months, Calculate the money she banked.

(4 marks)

31. Mutebi went to the market with Shs. 40,000. He bought the items shown in the table below. After paying for all the items, he remained with Sh. 6,000. Complete the table.

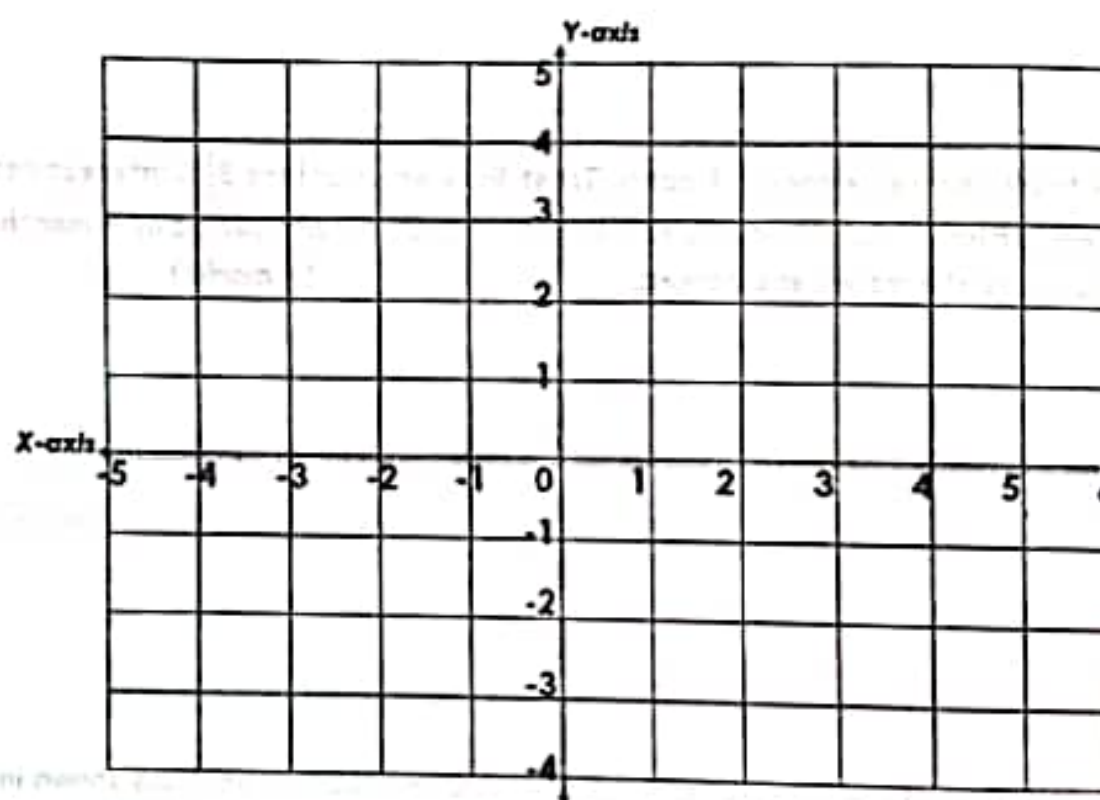
(6marks)

Item	Unit cost	Total cost
_____ litres of milk.	Sh.2,000 per litre.	Sh.5,000
3 loaves of bread	Sh._____ per loaf.	Sh. _____
2 Kg of sugar	Sh. 5,500 per Kg	Sh. _____
Total expenditure		Sh. _____

32. On the grid graph below,

- (a) plot the following points. A (-4, -2), B (2, -2), C (5, 1) and D (-1, 1).

(3 marks)



- b) Join A to B, B to C, C to D and D to A. Hence, name the polygon. (1 mark)

- c) If 1 square represents 1cm^2 , calculate the area of the figure formed. (1 mark)