THE SPECTRUM EXAMINATIONS HUB

PRE-MOCK EXAMINATIONS, 2024 SET 1

MATHEMATICS

Time allowed: 2 hours 15 minutes

	EMIS No.						Personal No.		
Index No.									

Pupil's Name: .....

School Name: .....

District Name: .....

Read the following instructions carefully:

1. This paper has two sections: A and B.

2. Section A has 20 questions (40 marks)

3. Section B has 12 questions (60 marks)

4. Answer all questions. All the working for both sections A and B must be shown in the spaces provided.

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

6. No calculators are allowed in the examination.

7. Unnecessary changes in your work and handwriting that cannot be easily read may lead to loss of marks.

8. Do not fill anything in the table indicated; "For examiners' use only" and the boxes inside the question paper.

FOR EXAMINER'S USE		
QN. NO.	MARKS	EXR'S NO.
1 - 10		
11 - 20		
21 - 30		
31 - 40		
41 - 43		
44 - 46		
47 - 49		
50 - 52		
53 - 55		
TOTAL		

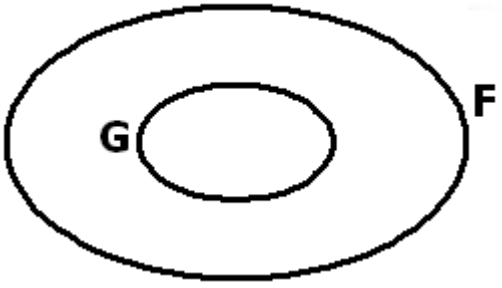
SECTION A (40 Marks)

1. Subtract: 84 - 61

2. Write "One million, one" in figures.

3. Simplify: 14 – n – 4n + 9.

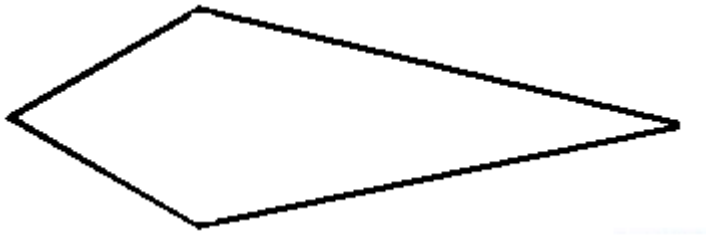
4. What is the relationship between sets F and G in the Venn diagram below?



5. Find the length of wire used to make a mosquito net ring of radius 35cm.
(Take $\pi = {}^{22}/_{7}$)

6. Simplify: $1\ ¼ - {}^{5}/_{6}$.

7. How many lines of folding symmetry does the figure below have?



8. Simplify: $^{-}6 - {}^{+}6$

9. After selling a TV set for Sh. 7,500,000, a trader gained Sh. 83,000. At what price did the trader buy the T.V set?

10. Find the square of $^{9}/_{4}$.

11. Work out: $111_{two} \times 110_{two}$

12. Solve: $3k^2 = 108$

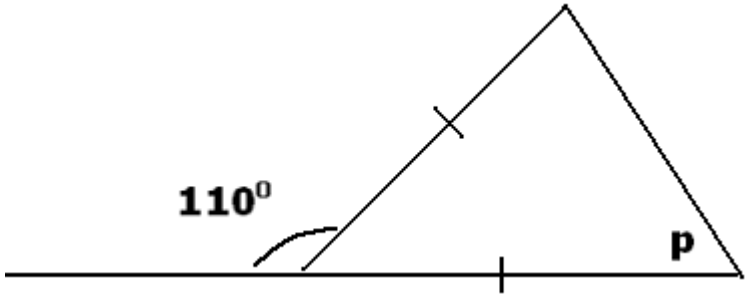
13. An ostrich ran 100m in 4 seconds. Express the speed of the Ostrich in kilometres per hour.

14. Given that X = {all factors of 36}. Find n(X).

15. A basket can hold 5 dozen mangoes. How many baskets are needed for 3,000 mangoes?

16. Kasagga borrowed a certain amount of money from a Credit Association which charges a simple interest rate of 8% p.a. If he paid Sh. 2,400,000 as interest after 9 months, how much money did Kasagga borrow?

17. Find the value of **P** in the diagram below.



18. What is the product of the place values of 4 and 7 in the numeral 546.711?

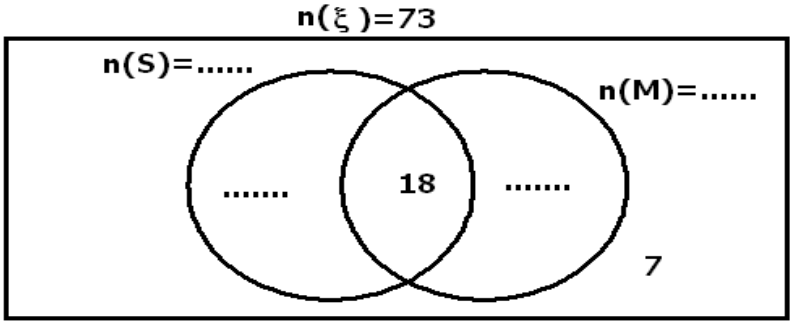
19. A batsman scored the following runs: 10 , 38 , 68 , 20 , 7 , 45. Calculate his median score.

20. If today is Wednesday, what day of the week was it 69 days ago?

SECTION B

21. At a birthday party attended by 73 guests, it was found out that 18 guests liked both soda (S) and mineral water (M). The guests who liked only soda were 2 more than those who liked only mineral water. 7 guests did not like any of the two soft drinks.

(a) Represent the above information in the Venn diagram below. (2 Marks)

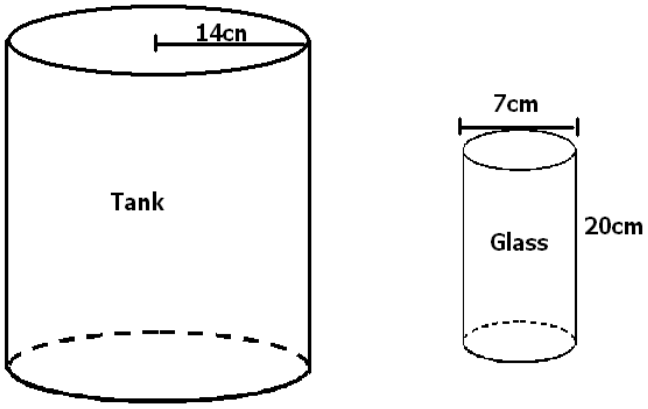


(b) How many guests liked only mineral water? (2 Marks)

22. Opondo spent $^1/_3$ of his monthly salary on Food, ¼ on Rent, $^3/_{10}$ of the remainder on Medicare and saved Sh. 210,000. How much money does he earn as salary?

(6 Marks)

23. Given the water containers drawn below.



If 88 glasses full of water fill the above tank, calculate the height of the tank. (Take $\pi = {}^{22}/_{7}$) (4 marks)

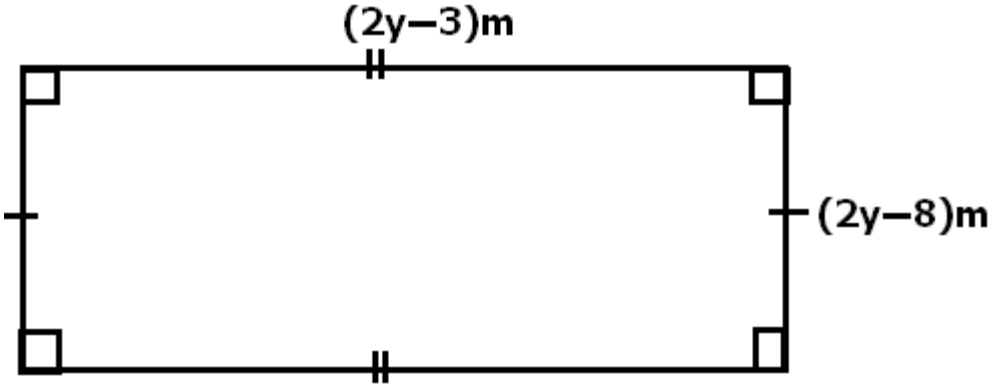
24. Apoloti went to the supermarket and bought the following as shown on the table below.

ITEM	QUANTITY	UNIT COST	AMOUNT
Sugar	2kg	Sh. 3000	Sh. _____
Rice	2 ½ kg	Sh. _____	Sh. 7500
Beans	1 ½ kg	Sh. _____	Sh. _____
Milk	_____ litres	Sh. 1200	Sh. 1500
TOTAL EXPENDITURE			**Sh. 18,000**

(a) Complete the table above. (5marks)

(b) If Apoloti was offered a discount of Sh. 1600 for paying cash, how much money did she pay for the items above? (1mark)

25. The total distance round the figure below is 34m.



(a) Find the value of **y.** (2 marks)

(b) Find the area of the figure. (3marks)

26. (a) Simplify: $2\ ^{2}/_{5} \div 3\ ^{1}/_{3} \times 1\ ^{2}/_{3}$ (3 marks)

(b). Work out: $\frac{6.3 \times 0.055}{3.4 - 2.63}$ (3marks)

27. The table below shows the performance of pupils in a test.

Marks Scored	75	40	90	60	80
Number of pupils	4	6	2	3	5

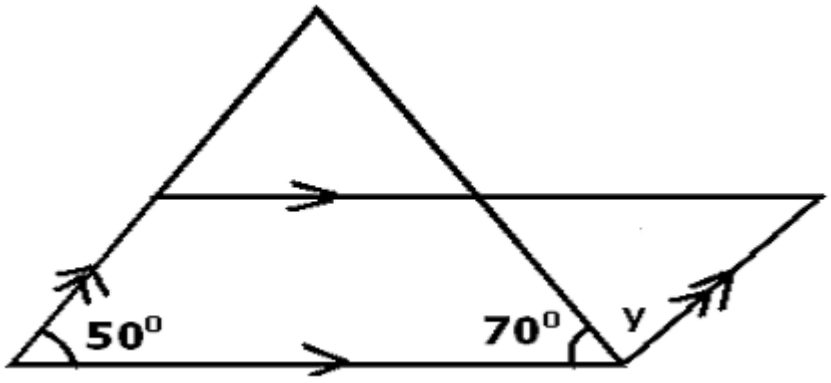
(a) What was the modal mark? (1 mark)

(b) How many pupils scored less than 80 marks? (2marks)

(c) Calculate the mean score. (2 marks)

28. (a)The interior angle of a regular polygon is 36^0 more than its exterior angle. How many sides does the polygon have? (3 marks)

(b) In the figure below, find the size of angle **y**. (2 marks)



29. (a) If x = 2, y = ¯3 and z = 4, find the value of $\frac{x^2z - y^2}{z - y}$ (2marks)

(b) A father is 26 years older than his son. In 12 years' time, the son will be half as old as the father. How old is the father now? (3 marks)

30. (a) Change 10111_{two} to decimal base. (2marks)

(b) Find the difference between the values of the digits 3 and 8 in the number 3985.

(2marks)

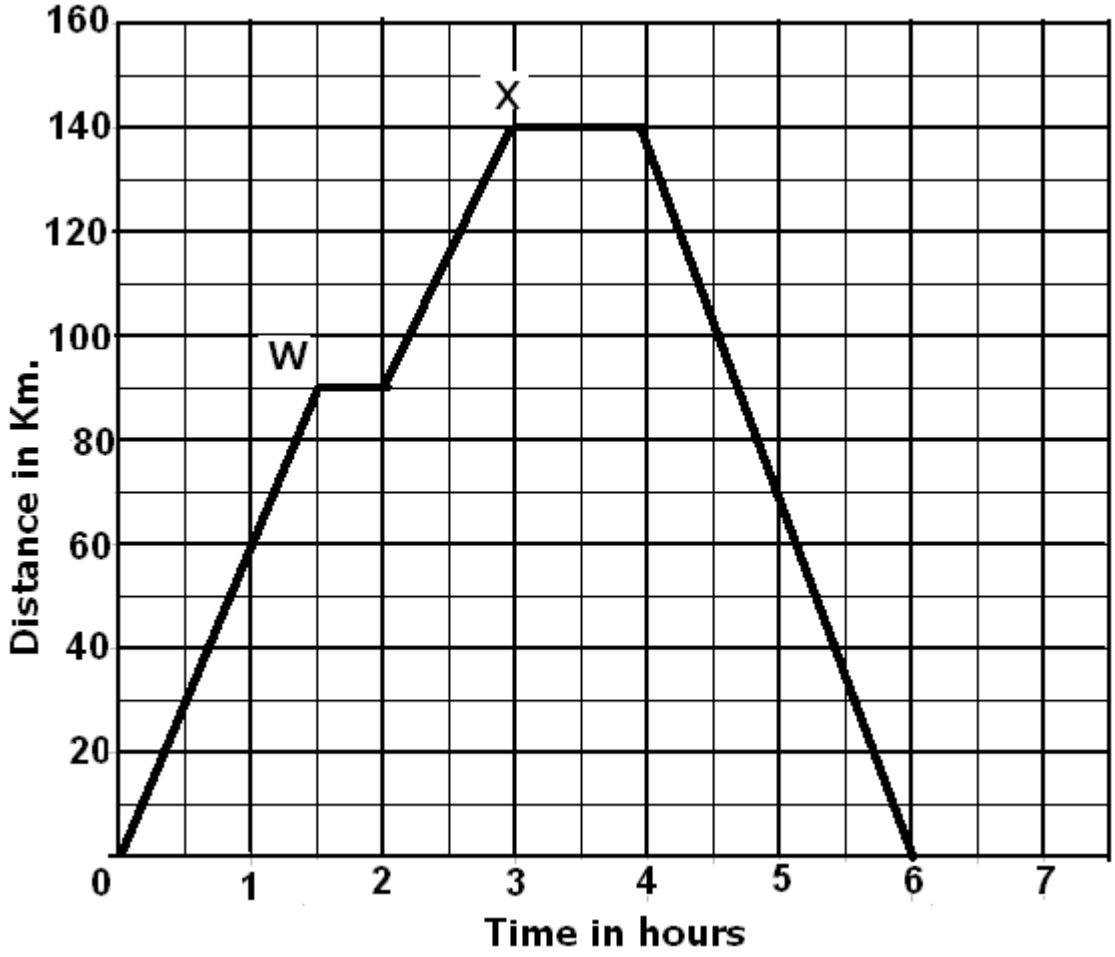
31. A motorist left town A and travelled 50km eastwards to town B. He then turned on a bearing of 150^0 and travelled 60km to town C.

(a) Draw a sketch diagram to show the motorist's journey. (1 mark)

(b) Using a scale of 1cm to represent 10km, draw an accurate diagram to show the motorist's journey. (3 marks)

(c) Find the shortest distance from town A to town C in km. (1mark)

32. **The travel graph below shows Malinga's journey from his home to town X by way of town W and back home. Use the graph to answer the questions that follow.**



(a) What was his speed from home to town W? (2marks)

(b) How far apart are town W and X? (1 mark)

(c) Work out Malinga's average speed for the whole journey. (2marks)

THE END