BROAD EXAMINATIONS©

PRE-PLE SPECIAL SET 2024

MATHEMATICS

Time allowed: 2 hours 30 minutes.

Random No.						Personal No.		

Candidate's Name:.....

Candidate's Signature.....

School Name:.....

District Name: .....

Read the following instructions carefully:

1. This paper is made up of 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 in both sections **A** and **B**.
5. All answers must be written in the space provided in blue or black ball point pens and ink. **Only diagrams should be done in pencil.**
6. Unnecessary crossing of answers will lead to loss of marks.
7. Any handwriting, which cannot be easily read, may lead to loss of marks.
8. Do **not** fill anything in the boxes indicated for Examiners' use only.

Pre-PLE Special 2024

FOR EXAMINERS' USE ONLY		
QN. No	MARKS	SIGN
1-10		
11-20		
21-22		
23-24		
25-26		
27-28		
29-30		
31-32		
TOTAL		

SECTION .A. (40 MARKS)

1. Work out: 99 - 66

2. Write XCIV in Hindu Arabic numerals.

3. Given that A = {a, b, c, d, e} and B = {a, e, i, o, u}. Find n(B-A).

4. Write the number represented by the tallies below.

   𝍸 𝍸 𝍸 |||

5. Using a ruler, a pencil and a pair of compasses only, construct an angle of 135^0.

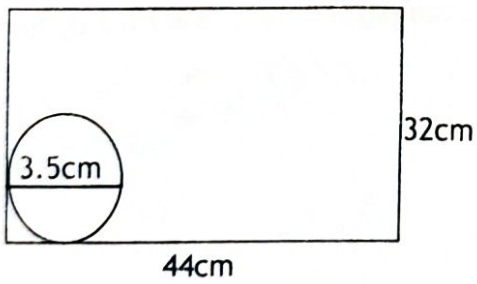
6. A goat was bought at sh.120,000 and sold at sh.130,000. Find the percentage profit.

7. What binary base number is represented by 17?

8. Four packets of mango juice cost sh.12,000. What is the cost of seven similar packets?

9. The figure below shows a rectangular metallic sheet measuring 44cm by 32cm. Circular plates of diameter 3.5cm are to be cut out from it. Study it carefully and answer questions about it.

Calculate the total number of circular plates that can be cut out of the rectangular sheet.



10. Evaluate: 2 - 5 = _____ (finite 6)

11. Given that x = 2 and y = 3, find the value of $3x + 2y$.

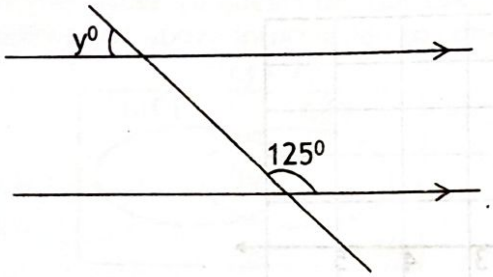
12. The number of proper subsets in set K is 15. How many elements are in set K?

13. Calculate the time taken by a bus to cover a distance of 280km at an average speed of 80km/h.

14. Decrease sh.45,000 in the ratio of 3:5.

15. A basket contains 3 rotten eggs and 6 good eggs. If the eggs in the basket are mixed, what is the probability of picking a rotten egg from the basket?

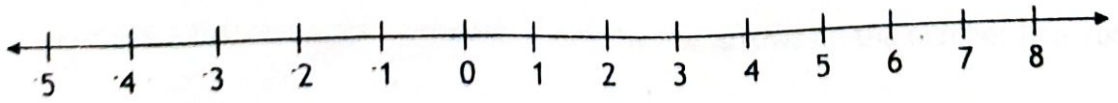
16. Find the value of y in the figure below.



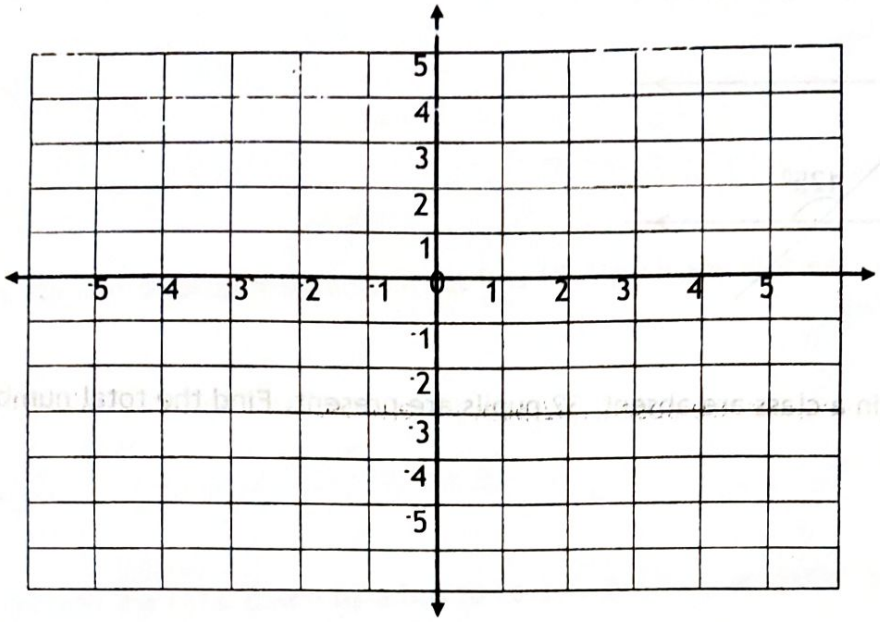
17. When $\frac{1}{9}$ of the pupils in a class are absent, 32 pupils are present. Find the total number of pupils in the class.

18. The Lowest Common Multiple (L.C.M) of two numbers is 72 and their Greatest Common Factor (G.C.F) is 6. If one of the numbers is 24, find the second number.

19. On the number line below, show 4 x 2.



20. On the graph below, mark point M (1, 4).



SECTION .B. (60 MARKS)

21. (a) Express 52,000 in standard form.

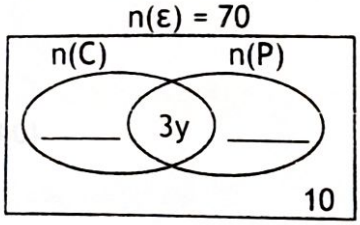
(02 Marks)

(b) Work out: (29 x 43) + (71 x 43)

(02 Marks)

22. In a party attended by 70 guests, 40 took Coke (C), 35 took Pepsi (P), 3y took both drinks while 10 guests did not take any of the two drinks.

(a) Use the above information to complete the venn diagram below.

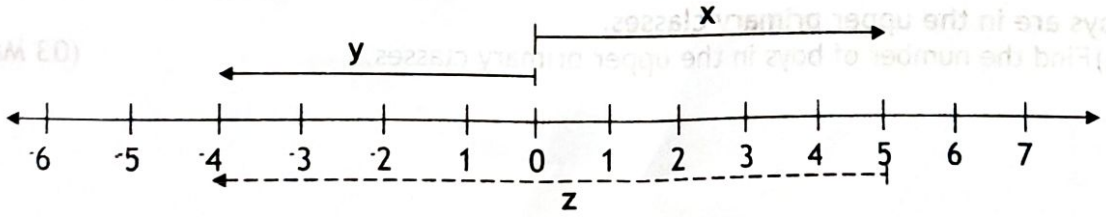


(02 Marks)

(b) Find the value of y.

(03 Marks)

23. Study the number line below and use it to answer the questions about it.



(a) What integers are represented by the arrows on the number line above?

(i) x = (ii) y = (iii) z =

(03 Marks)

(b) Write a mathematical sentence shown by the arrows on the number line above.

(01 Mark)

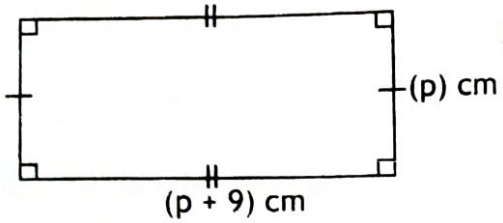
24. **Amanda went shopping with a 20,000 shilling note. She bought the following items from a shop.**
3 bottles of mineral water at sh.2,000 each bottle.
$1\frac{1}{2}$ bottles of milk at sh.3,000 per litre.
A dozen of eggs at sh. 1,000 per 3 eggs.
(a) Calculate her total expenditure. **(04 Marks)**

(b) How much money did Amanda remain with after buying all the items? **(02 Marks)**

25. **A primary school has a population of 1080 pupils. Of these, $\frac{3}{5}$ are girls and $\frac{1}{4}$ of the boys are in the upper primary classes.**
(a) Find the number of boys in the upper primary classes. **(03 Marks)**

(b) Express the number of boys in the lower primary classes as a percentage of the whole school population. **(02 Marks)**

26. **The figure below is a of rectangle and its perimeter is 82cm. use it to answer questions about it.**



(a) Find the value of P.

(02 Marks)

(b) Calculate the area of the above rectangle.

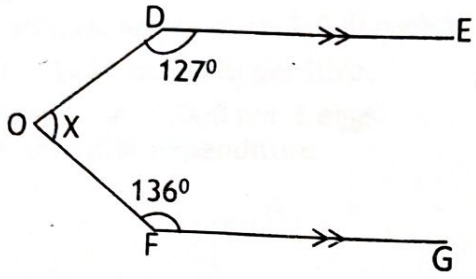
(03 Marks)

27. (a) The interior angle of a regular polygon is 36^0 more than its exterior angle. What is the size of each exterior angle?

(03 Marks)

(b) In the figure below DE is parallel to FG, angle ODE = 127^0 and angle OFG = 136^0. Calculate the size of angle X.

(03 Marks)



28. **A cyclist travelled from town A to town B at an average speed of 60km per hour for 2 hours. He then continued to town C at a steady speed of 50km/h. He took 5 hours to travel from town A to town C.**

(a) Find the distance between towns B and C.

(02 Marks)

(b) Calculate the cyclist's average speed for the whole journey.

(03 Marks)

29. **Given that y = x - 1, complete the table below.**

x	-3	_____	0	_____	3
y	_____	-2	_____	0	_____

(05 Marks)

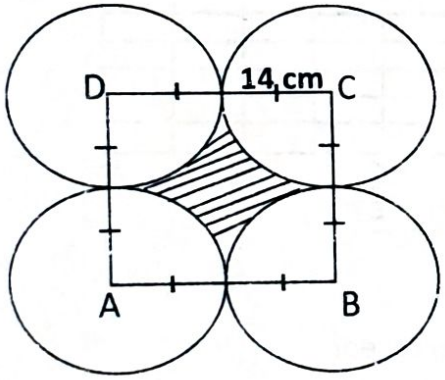
30. (a) Simplify; $2(2p - 3) - (3p - 1)$

(02 Marks)

(b) Solve for d; $2d - 14 = 16 - d$

(03 Marks)

31. **The diagram below shows four circles connected to each other, each of radius 14cm. A quarter of each circle is occupied by a square ABCD. Study and use it to answer questions about it.**



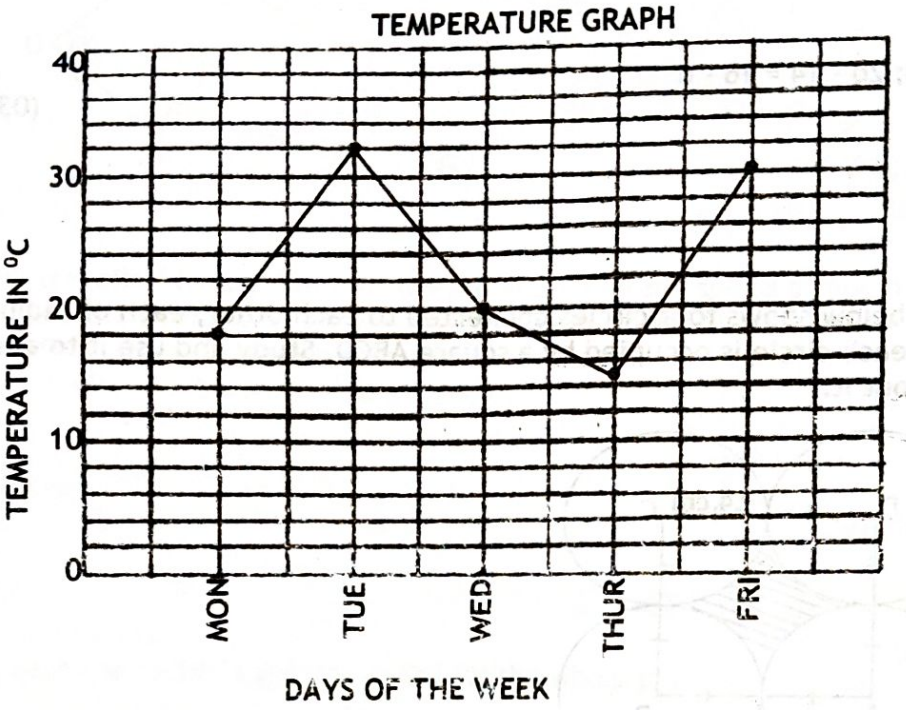
(a) Calculate the area of the square.

(02 Marks)

(b) Work out the area of the shaded part. (Use $\pi = \frac{22}{7}$)

(03 Marks)

32. The line graph below shows the temperature of a certain place recorded over a week. Study the graph and answer the questions that follow.



(a) On which day was the highest temperature recorded?

(01 Mark)

(b) What was the lowest temperature recorded?

(01 Mark)

(c) Find the mean temperature of the week.

(02 Marks)

END