SUREKEY EXAMINATIONS BOARD
PRE-PLE LOWER SERIES (MOSCOW)
2024
MATHEMATICS

Time Allowed: 2 hours 30 minutes

Index No.	Random No.						Personal No.		

Candidate's Name: ....

Candidate's Signature: ....

School Name: ....

District Name: ....

Read the following instructions carefully:

1. Do not forget to write your **school** and **district name** on this paper.

2. This paper has two sections: **A** and **B**. Section **A** has **20** questions and Section **B** has **12** questions. The paper has **16 printed pages** altogether

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

4. **All** working must be done using a **blue** or **black** ball point pen or ink. Any work done in pencil other than graphs and diagrams will **not** be marked.

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

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

7. Do not fill anything in the table indicated: **"For Examiners' Use only"** and boxes inside the question paper.

<table>
<tr><th colspan="3">FOR EXAMINERS' USE ONLY</th></tr>
<tr><th>Qn.No.</th><th>MARKS</th><th>EXR'S NO.</th></tr>
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0700758668   **Turn Over**

SECTION A: 40 MARKS
Answer **all** questions in this Section
Questions **1** to **20** carry two marks each

1. Workout: $124 \div 4$.

2. Write "One hundred thousand, one hundred nine" in figures.

3. Given that Q = {all prime numbers less than 10}. Calculate the number of proper subsets in Set Q.

4. The following lengths of five trees in a school compound were recorded during an environment survey; 51cm, 69cm, 53cm, 61cm and 64cm. Find the median length of the trees.

5. Calculate the highest number of children that can share either 18 or 24 rulers leaving no remainder.

6. The area of the figure below is 90cm².
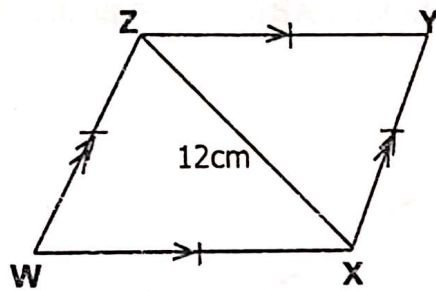
Find the length of the diagonal **WY**.

7. Simplify: $5a - 3(2 + a)$

8. Find the next number in the sequence below.

1, 2, 5, 11, 21, 36, ...

Turn Over

9. Harriet had 5 packets of yoghurt each weighing 2500ml. Find the weight of the packets in litres.

10. In the figure below, **ABC** is a straight line, **ABD** is an equilateral triangle.
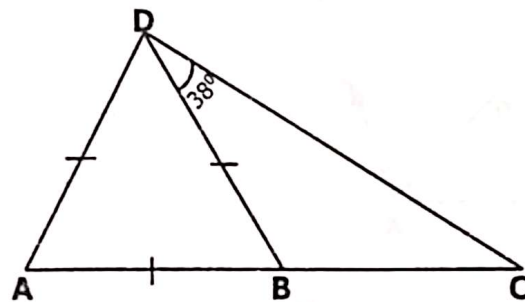
Find the size of angle **BCD** in degrees.

11. A water tank was $\frac{2}{3}$ full of water, before $\frac{1}{3}$ of it was sold by the owner. What fraction remained after selling some water?

12. Convert 4600 square centimetres to square metres.

13. Use a protractor to measure the size of the angle below.
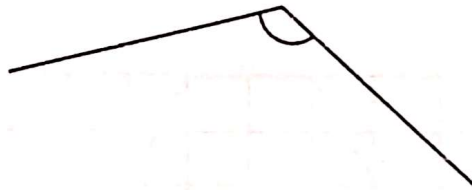
14. Express $12\frac{1}{2}\%$ as a common fraction in the simplest form.

15. Suzan bought 6 heaps of mangoes at Sh.7,200. How many heaps would she buy for Sh.4,800. For the same type of mangoes?

5
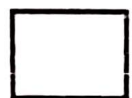
16. A car covered a distance of 880cm in four revolutions. Calculate the diameter of the car wheel. (Use π as $\frac{22}{7}$)

17. The graph below shows a driver's journey from Masindi to Hoima and back to Masindi.
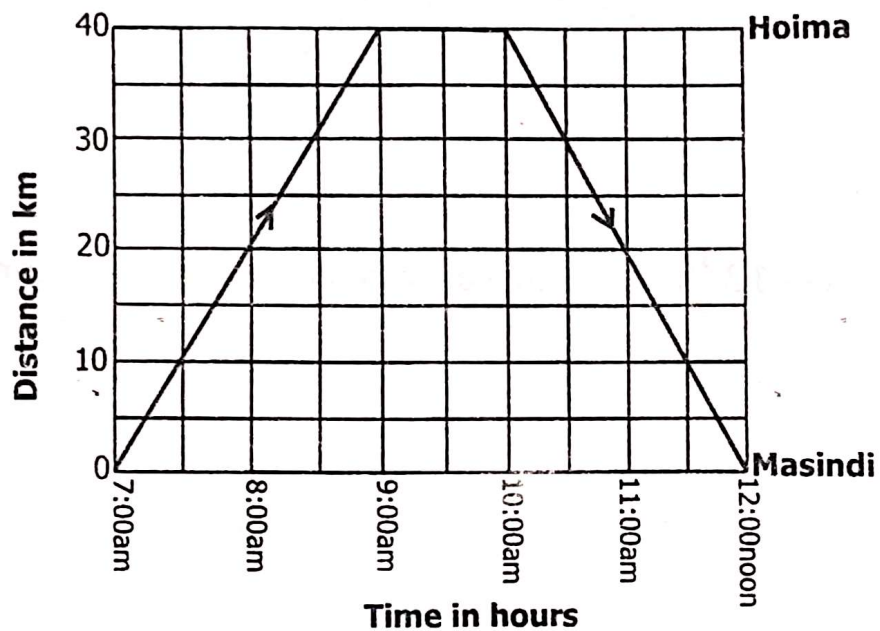
Calculate the driver's average speed for the whole journey.

18. Write 949 in Roman Numerals.

19. Solve: $3^{3n} \div 3^n = 81$.

20. The distance on a map between the school Kitchen and the Main Hall is 12cm. Find the actual ground distance in kilometres, between the two places using a scale of 1:50,000.

Turn Over

21.   At a birthday party, Biscuits (B) and Cakes (C) were served as shown in the Venn diagram below.
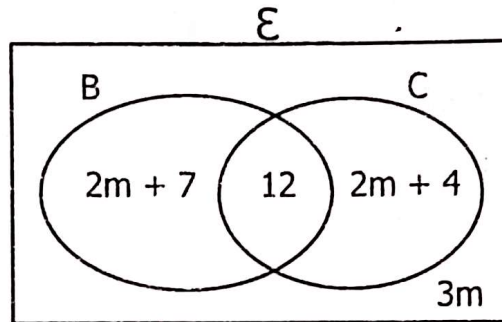
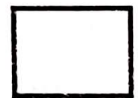(a)   If 19 guests were not served with biscuits, find the value of m.

(02 Marks)

(b)   Find the total number of guests that attended the party. (02 Marks)

(c)   Find the probability that a guest picked at random did not take any of the two eats.

(01 Mark)

22. (a) Write the place value of 3 in 431_{five}. (01 Mark)

(b) Find the value of 4 in (a) above. (02 Marks)

(c) Workout: $101_{two} \times 11_{two}$. (02 Marks)

23. In a Mathematics test, 4 pupils scored 40 marks, 3 pupils scored 70 marks, 2 pupils scored 60 marks and the best pupil scored 90 marks.

(a) Workout the modal mark. (01 Mark)

(b) Calculate the mean mark of the test. (03 Marks)

Turn Over

24. The table below shows how a cyclist travelled from Iganga to Kampala.

Town	Arrival time	Departure time
Iganga	....	9:45a.m
Lugazi	10:30a.m	10:45a.m
Mukono	11:45a.m	12:00 noon
Kampala	1:15p.m	....

(a) Express the arrival time to Kampala in the 24-hour clock system.

(01 Mark)

(b) Find the time the cyclist took to travel from Lugazi to Kampala.

(02 Marks)

(c) If the distance between Lugazi to Kampala is 210km, calculate the average speed of the cyclist for the whole journey. (02 Marks)

(a)   Find the total number of books shared by the three children.

<div align="right">(03 Marks)</div>

(b)   Express Faith's share as a percentage of the total share.

<div align="right">(02 Marks)</div>

26.   In a school of 1200 pupils, $\frac{2}{3}$ are boys and the rest are girls. If 40% of the girls and $12\frac{1}{2}$ % of the boys are boarders, how may pupils are in boarding altogether?

<div align="right">(05 Marks)</div>

Turn Over
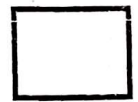
27. Small cylindrical tins of diameter 14cm and height 10cm were packed in rectangular box of length 70cm and width 42cm as shown below.

Tin

10cm

14cm

h

42cm

70cm
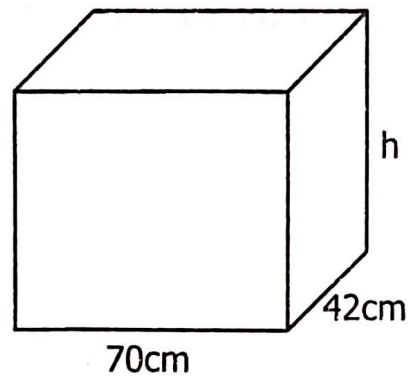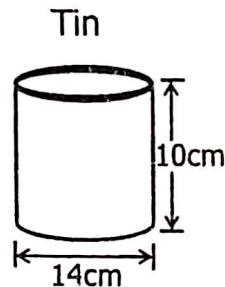
(a) Calculate the area of the lid used to cover the tin. (Use π as $\frac{22}{7}$)

(02 Marks)

(b) If 90 tins were packed in the box, find the height (h) of the box.

(03 Marks)

28. (a) Using a ruler, a pencil and a pair of compasses only, construct a
a quadrilateral BCDE where BC = 6cm, CD = BE = 5cm and
angle BCD = CBE = 120^0. (05 Marks)

Measure length ED. .... (01 Mark)

Turn Over

29. A trouser, a belt and a shirt cost Sh.50,000 altogether. A trouser costs 5 times as much as a shirt, a shirt costs Sh.6,000 more than a belt. How many belts can be bought with Sh.10,000? (05 Marks)

30. An Estate Company fenced a circular piece land of diameter 56 metres using poles and two lines of barbed wire.

   (a) Find in metres, the length of the barbed wire that was used to fence the piece of land. (Use π as $\frac{22}{7}$) (02 Marks)

(b)   If the poles were fixed 800cm apart, find the number of poles that were used to fence the piece of land.   (03 Marks)

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31.   In the diagram below, line BF is parallel to line CE. Study it carefully and answer the questions that follow.
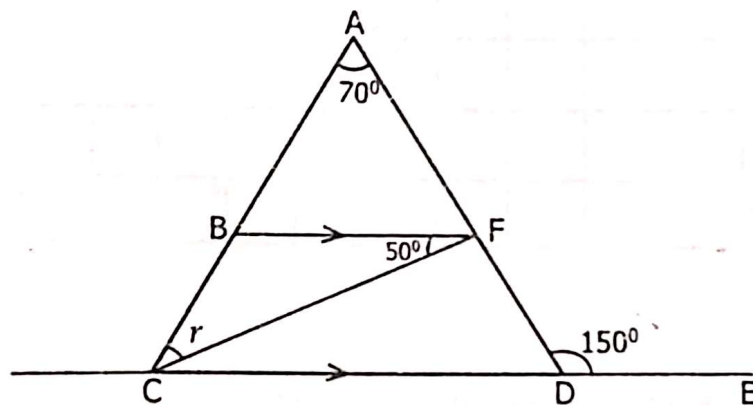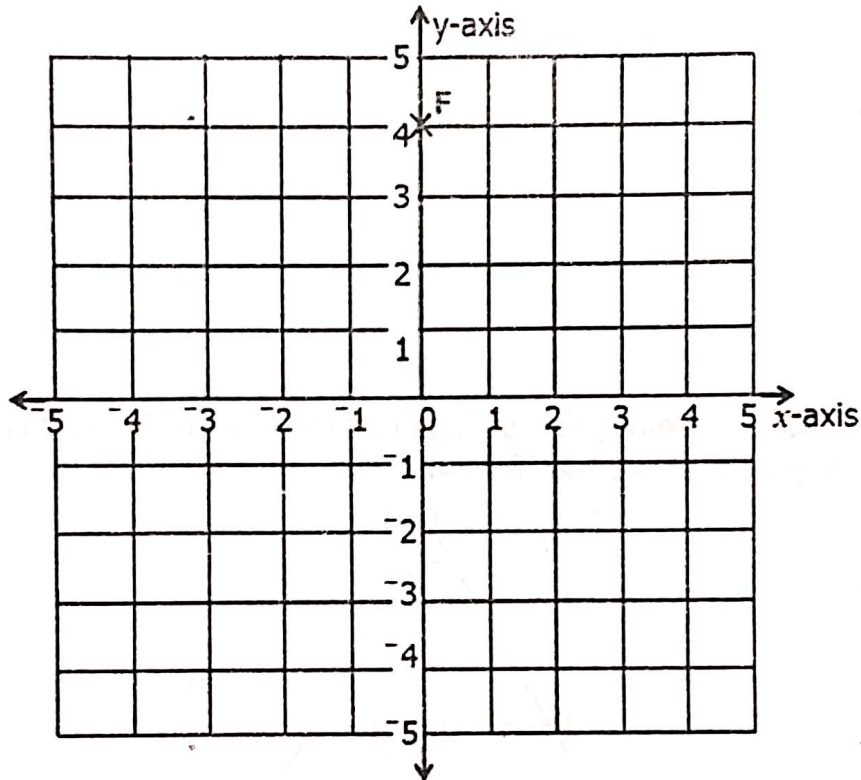

(a)   Find the value of r.   (02 Marks)

(b)   Calculate the size of angle marked AFB.   (02 Marks)

Turn Over

32. On the Cartesian plane below,

(a) Plot the points, **E**(-2, 1), **G**(2, 1) and **H**(0, -4). (03 Marks)

(b) Write down the coordinates of point **F**. (01 Mark)

(c) What geometric figure is formed when **E** is joined to **F**, **E** to **H**, **H** to **G** and **F** to **G**? (02 Marks)

....

END