PACE EDUCATION SERVICES

PRE PLE SET ONE (MERCURY)

2026

MATHEMATICS

Total Marks scored	

Time Allowed: 2 hours 30 minutes

Random No.						Personal No.		

Candidate's Name: .....

Candidate's Signature: .....

District ID No.

Read the following instructions carefully:

1. Do not write your **school** or **district name** anywhere 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 **15 printed** pages.
3. Answer **all** questions. **All** 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 be easily read may lead to **loss of marks**.
7. Do not fill anything in the table indicated **"FOR EXAMINERS' USE ONLY"** and in the boxes inside the question paper.

FOR EXAMINERS' USE ONLY		
QN. NO.	**MARKS**	**EXR'S NO.**
1 – 5		
6 – 10		
11 – 15		
16 – 20		
21 – 22		
23 – 24		
25 – 26		
27 – 28		
29 – 30		
31 – 32		
TOTAL		

SECTION A: 40 MARKS

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

1. Subtract 0.32 from 3.2.

2. Write "Twenty thousand, twenty" in figures.

3. Given that the proper subsets of set P are; {c}, {s}, {t}, {c,s}, {c,t}, {s,t}, {}. Find n(P)

4. Workout: 2 – 10 (finite 12)

5. Find the next number in the sequence: 100, 91, 79, 64, 46, …….

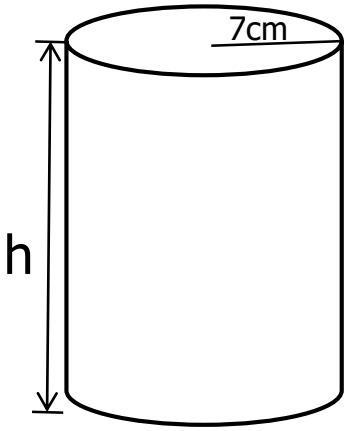
6. Simplify: $\frac{8^2 \times 2}{2^5}$

7. Using a ruler, a pencil and a pair of compasses only, construct an angle of 30° in the space provided below.

8. Amina is t years old and 8years younger than her brother. If their total age is 30years. Determine Amina's age.

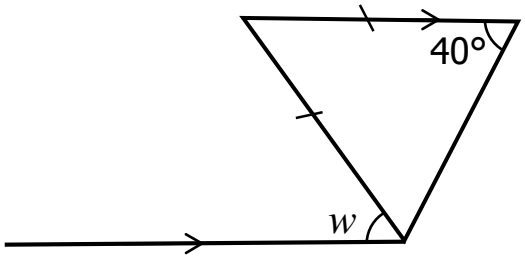
9. Write 305.2 in scientific notation.

10. The capacity of a cylindrical tin below is 7.7litres. Calculate its height. (use $\pi = \frac{22}{7}$)



11. A bus reached its destination at 16 40hours after travelling for 7hours. Determine the time at which the journey started.

12. In the figure below, find the size of w in degrees:



13. Find the smallest number of books that can be packed into boxes containing either 12 or 18 books leaving 5 books as the remainder in each case.

14. Given 1 US dollar ($) costs Uganda shilling (Ugsh) 3,600 and 1 Kenya shilling (Ksh) costs Ugsh. 30. Determine the value of 1US dollar in Kenya shillings.

15. The data below shows ages in years of pupils in a class; 14, 12, 10, 19, 16, 18, 22, 20. Find the median age.

16. Correct 7.846 to two decimal places.

17. Complete the operation shown below.

$$\begin{array}{r} 4\ 3\square \\ -\ 8\ 9 \\ \hline 3\square 7 \\ \hline \end{array}$$

18. Thirty-six streetlights are placed at equal intervals along a straight road. The distance from the first to the last streetlight is 1,750 metres. Calculate the distance between two consecutive streetlights.

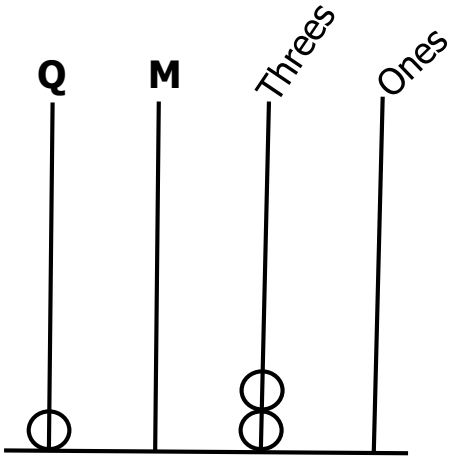
19. Solve the inequality: $5 + \frac{3}{c} \geq 8$

20. 8 technicians can install a solar system in 15days. Determine how many more technicians are needed to complete the same work in 10days working at the same rate.

SECTION B: 60 MARKS

Answer **all** *the questions in this section.*
Marks for each question are indicated in the brackets.

21. Use the abacus below to answer questions that follow.



(a) Find the place values represented by the letters.

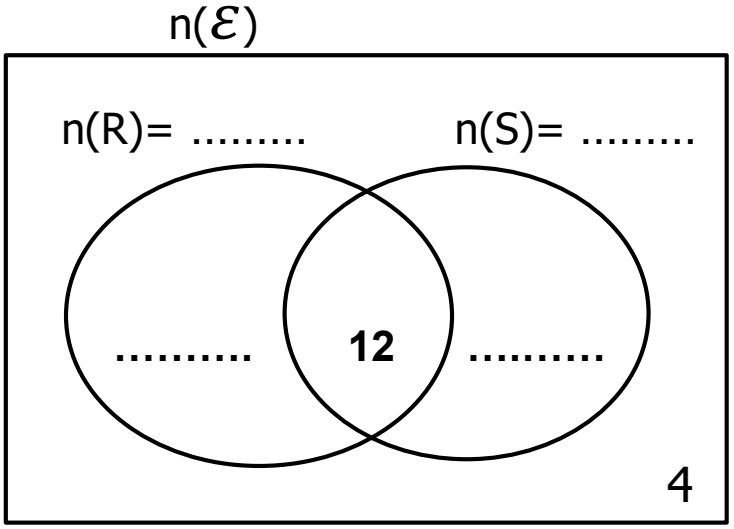
(i). **Q** (*01 mark*)

(ii). **M** (*01 mark*)

(b) Convert the numbers represented on the abacus to base four.
(*04 marks*)

22. In a village, (4w-3) farmers grow rice (R) only, 12 farmers grow both rice and sunflower, (w+4) grow sunflower (S) only, while 4 grow neither of the two types of crops.

(a) Use the given information to complete the Venn diagram below. (*04 marks*)



(b) Given that there are 14 more farmers who grow rice than sunflower, find the value of w. (*02 marks*)

23. A school bursar deposited 30% of the money collected in the bank which offers a simple interest rate of 20% per annum for 9 months. If he got a total amount of sh. 69,000 after 9 months. Calculate the amount he collected. (*05 marks*)

24. The interior and the exterior angles of a regular Polygon are in the ratio of 5:1 respectively.

(a) Name the polygon. (*03 marks*)

(b) Calculate the sum of all interior angles of the polygon. (*02 marks*)

25. A shopkeeper packs 24 bottles of juice in a carton. The total mass of the carton and the bottles of juice is 15.2Kg. The empty carton has a mass of 0.8Kg. Each empty bottle has a mass of 100g. If each bottle contains the same amount of juice, determine the mass of the juice in each bottle.
(*04 marks*)

26. Kasimu went shopping with sh. 40,000. He bought items shown in the table below and was given a discount of sh. 2,600 on the total cost. He paid for the items and received sh. 10,100 as change.

Complete the table below. (*06 marks*)

Item	**Quantity**	**Unit cost**	**Total cost**
Sugar	2Kg	Sh. 5,000	Sh. 10,000
Meat	…… Kg	Sh. 16,000	Sh. 8,000
Soap	3 bars	Sh. ……	Sh. ……
Salt	500g	Sh. 2,000	Sh. 1,000
Total Expenditure			**Sh.** ……

27. The average of three consecutive multiples of 5 is 25. Find the numbers.
(*04 marks*)

28. (a) Solve: $3(v - 5) = v + 7$ (*02 marks*)

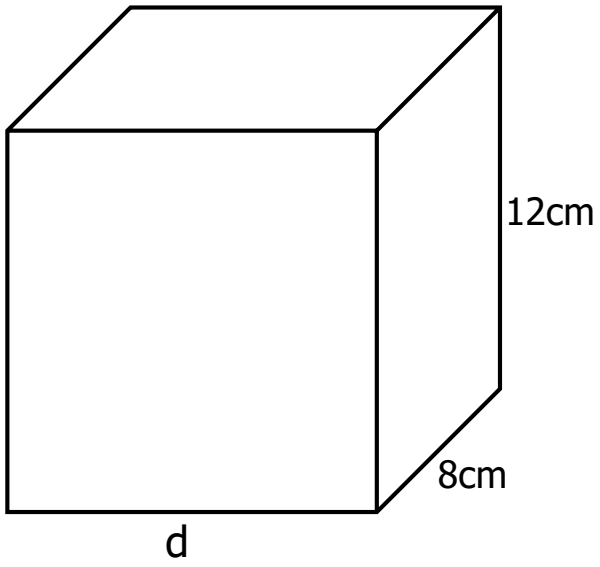
(b) Simplify: $\frac{3}{8}(16f - 24j)$. (*02 marks*)

29. Our school team won 8 more games than the number lost to the other teams. The probability of winning a game was $\frac{5}{8}$.

(a) Find the number of games the team lost (*03 marks*)

(b) Calculate the total number of games played in the tournament. (*02 marks*)

30. The total length of all the edges of the cuboid below is 120cm. Study and use it to answer the questions that follow.



(a) Determine the value of d (*02 marks*)

(b) Calculate the volume of the cuboid (*02 marks*)

31. A motorist started a journey of 180Km at 7:30 a.m at a speed of 45Km/h. At 9:30 a.m, his car broke down and the repair took 30minutes. Calculate the speed at which the motorist must drive the remaining distance to reach his destination at 12:00 noon. (*05 marks*)

32. A ship sails 100km from port **X** on a bearing of 110° to port **Y**. It then sails 70Km from port **Y** on a bearing of 200° to port **Z**. Using scale of 1cm to represent 20km.

(a) Draw an accurate diagram showing the positions of three ports.

(*05 marks*)

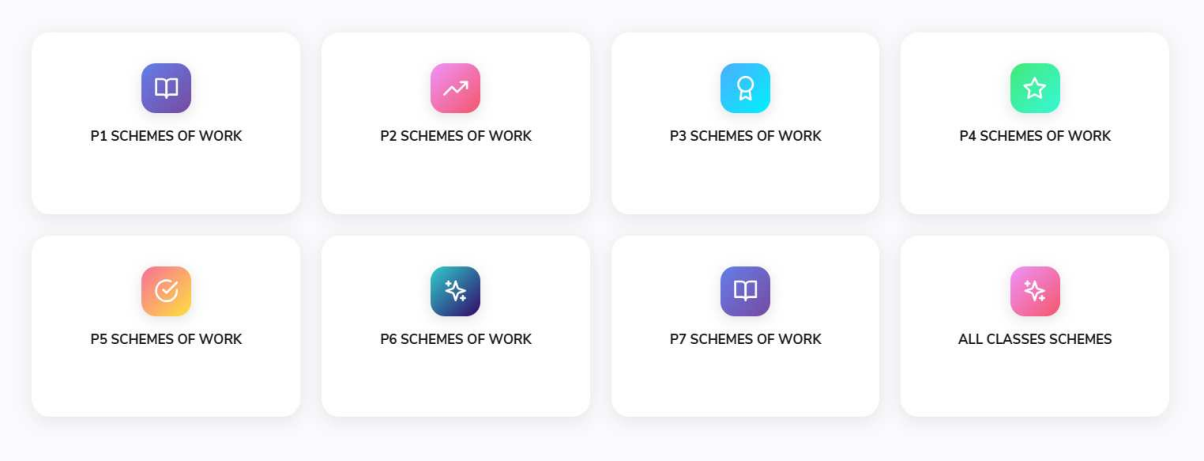
(b) Find the distance XZ in Kilometres. (*01 mark*)

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Wishes you success

THE END

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