KAMPALA PRIMARY SCHOOLS'
SKYLINE EXAMINATIONS™

P.L.E – 2024

Set 04 (FINAL)

MATHEMATICS

Time Allowed: 2 hours 30 minutes

Index No. | | | | | | | | | |

Candidate's Name:.....

Candidate's Signature:.....

School Name:.....

District Name:.....

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FOR EXAMINERS' USE ONLY

Read the following instructions carefully;

1. The paper has **two** Sections: **A** and **B**
2. Section **A** has 20 short questions (40 marks).
3. Section **B** has 12 questions (60 marks).
4. Attempt **ALL** questions. All answers to both Sections **A** and **B** must be written in the spaces provided.
5. All answers must be written using blue or black ball-point pen or ink. Only diagrams and graphs work may be done in pencil
6. Unnecessary alteration of work will lead to loss of marks.
7. Any handwriting that cannot easily be read may lead to loss of marks.
8. Do not fill anything in the boxes indicated for examiners' use only.

FOR EXAMINERS' USE ONLY		
Qn. No.	MARK	SIGN
1 – 4		
5 – 8		
9 – 12		
13 – 16		
17 – 20		
21 – 23		
24 – 26		
27 – 29		
30 – 32		
TOTAL		

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SECTION A: 40 MARKS

Questions 1 to 20 carry **two** marks each.

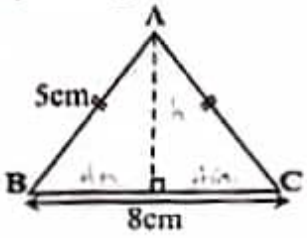
1. Multiply: 123 × 2

123
× 2
246

2. Write "Eight thousand eighty eight" in figures.

Eight thousand = 8000
eighty eight = + 88
8088

3. Study the figure ABC below and use it to work out the height of the triangle.



$a^2 + b^2 = c^2$
$a^2 + (4)^2 = (5)^2$
$a^2 + 4 \times 4 = 5 \times 5$
$a^2 + 16 = 25$
$a^2 + 16 - 16 = 25 - 16$
$a^2 + 0 = 9$
$a^2 = 9$
$a = 3$
height is 3

4. What is the next number in the sequence:

$\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32}$

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

5. Solve the inequality:
$18 \leq 4n+6 \leq 30$

$18 = 4n + 6 \leq 30$
$18 - 6 \leq 4n + 6 - 6 \leq 30 - 6$
$12 \leq 4n + 0 \leq 24$
$\frac{12}{4} \leq \frac{4n}{4} \leq \frac{24}{4}$
$3 \leq n \leq 6$

6. Karamagi sold his radio at Shs.140,000/= and realised a gain of Shs.40,000/=. What is his percentage gain?

C.P = SP − P
= Sh 100,000
Sh 40,000
Sh 100,000

%gain = $\frac{\text{gain}}{\text{C.P}} \times 100\%$
= $\frac{40,000}{100,000} \times 100\%$
= 40%

7. A bag contains 10 blue pens and 8 red pens. If a pen is picked from the bag at random. Find the probability of picking a blue pen.

Total no of pens
10 + 8 = 18 pens
$P = \frac{n}{T_o}$
$\frac{10}{18}$

8. A polygon has an interior angle sum of 1080^0. How many sides has the polygon?

$(n-2) \times 180^0 = 1080^0$
$\frac{180^0(n-2)}{180^0} = \frac{1080^0}{180^0}$
$n - 2 = 6$
$n - 2 + 2 = 6 + 2$
$n - 0 = 8$
$n = 8$

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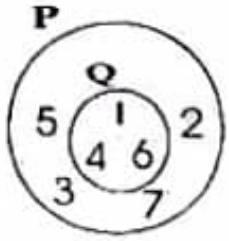
9. Using the figure below, find n(P – Q).

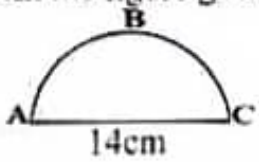


10. Kanyike deposited Shs.200,000/= in the bank. If the interest rate was 10% per month. How much interest did he get after the 8 months?

S1 = P×R×T
= Sh200,000 × 10% × 8 mo
= Sh200,000 × 10/100 × 8
= Sh2000 × 10 × 8

11. Subtract 3m – 2n from 5m – 2n	12. Given that Set X = {1, 2, 3}. Write all the proper subsets of Set X.
(5m – 2n) – (3m – 2n) 5m – 2n – 3m + 2n 5m + 3m – 2n + 2n 2m – 0 2m	{1, 2, 3} { }, {1}, {2}, {3}, {1, 2} {1, 3}, {2, 3}

13. In the figure given below, find the length of ABC.



length ABC = $\frac{1}{2}\pi d$
= $\frac{1}{2} \times \frac{22}{7} \times 14$ cm
= 11 × 2 cm
= 22 cm

14. What is the mean of ½ and ¾?	15. Express $^5/_6$ to decimal form.
$\frac{\frac{1}{2}+\frac{3}{4}}{2}$ LCD = 4 $\frac{\frac{1}{2}\times 4 + \frac{3}{4}\times 4}{2}$ $\frac{2+3}{2}$ $\frac{5}{2}$ 2 rem 1 $= 2\frac{1}{2}$	0.833 6) 5.000 0.1 60 48 20 18 20 $\frac{5}{6} = 0.83\ldots$

16. The average mass of 4 people is 52Kg. When two people join them, their average mass becomes 50Kg. Find the mass of the two people.

mass of the two people

mm = 4 × 52 kg
= 208 kg
m = 6 × 50 kg
= 300 kg

300 kg
– 208 kg
92 kg

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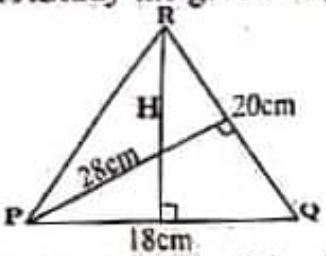
17. Increase 140 goats in the ratio ¾:½		18. Subtract: $1011_{two} - 110_{two}$
$\frac{New}{old} \times 140$ $\left(\frac{3}{4} \div \frac{1}{2}\right) \times 140$ $\frac{3}{\cancel{4}_2} \times \frac{\cancel{2}^1}{1} \times 140$ goats	$\frac{3}{\cancel{2}_1} \times \cancel{140}^{70}$ 3×70 $= 210$ goats	$\begin{array}{r} 1011_{two} \\ -\ 110_{two} \\ \hline 0101_{two} \end{array}$

19. Study the given diagram below and use it to find the value of **H**.

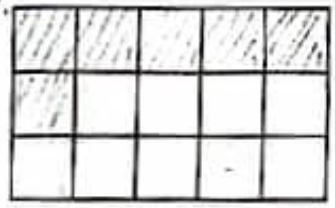


$\frac{b \times h}{2} = \frac{b \times h}{2}$

$\frac{\cancel{20}^{10}cm \times 28cm}{\cancel{2}_1} = \frac{\cancel{18}^{9}cm \times H}{\cancel{2}_1}$

$\frac{280cm \times cm}{9cm} = \frac{\cancel{9}cm}{\cancel{9}}$

20. Shade 40% of the diagram below.



$\frac{\cancel{40}^{2}}{\cancel{100}_{\cancel{5}_1}} \times \cancel{15}^{3}$

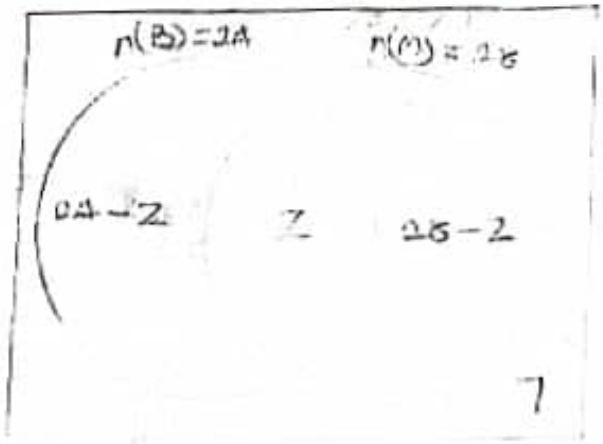
$2 \times 3 = 6$

SECTION B: 60 MARKS

21. Given that n(**B**) represents pupils who like Beans and n(**M**) represents pupils who like Meat in Masaku Parents School. If n(ξ) = 51, n(**B**) = 24, n(**M**) = 28, n(**B U M**)' = 7 and those who like both Beans and Meat are **Z**.

(a) In the space below, draw a Venn diagram to show the above information. (3 marks)

$\xi = 51$
$n(B) = 24$
$n(M) = 28$
$n(B \cup M)' = 7$
$n(B \cap M) = Z$



$\xi = 51$

(b) Using the diagram, find the value of **Z**. (2 marks)

$Z = (24 + 28 + 7) - 51$
$= 59 - 51$
$= 8$

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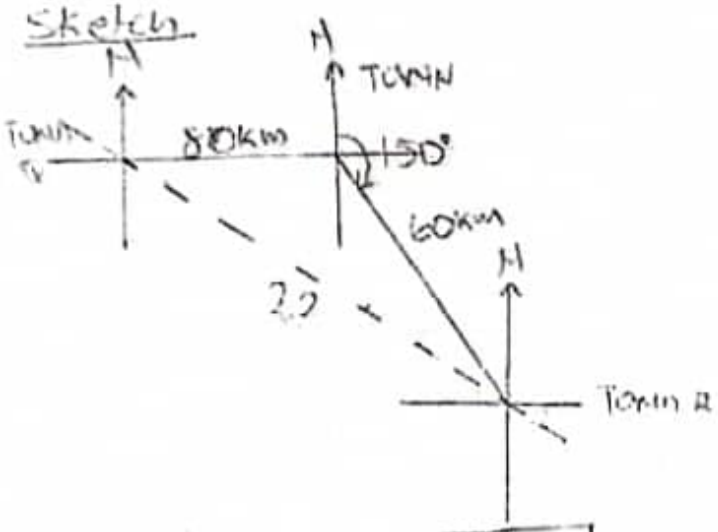
24.(a) Town **Q** is 80Km on the eastern side of Town **P** and Town **R** is 60Km from **Q** on bearing of 150^0. Draw an accurate diagram to show the position of the three towns (3 marks)

1CM = 20KM

Accurate

Sketch



Actual distance	drawing distance	Bearing
80KM	$\frac{80}{20}$ = 4cm	090°
60KM	$\frac{60km}{20}$ = 3cm	150°

(b) Find the shortest distance between Town **P** and Town **R**. (2 marks)

25.(a) Three Kikuubo traders bought rice from Kigumba Rice Scheme as follows: (3 marks)
(K+3)metric tonnes, **(3K−10)**metric tonnes and **(2K+5)**metric tonnes.
The total quantity of rice bought was 64 metric tonnes. Calculate the value of **K**.

$K+3+3K-10+2K+5 = 64$

$K+3K+2K+3+5-10 = 64$

$6K+6-10 = 64$

$6K-2 = 64$

$6K-2+2 = 64+2$

$6K-0 = 66$

$6K = 66$

$\frac{6K}{6} = \frac{66}{6}$

$K = 11$

(b) What is the largest quantity of rice in metric tonnes that was bought by the traders? (2 marks)

$K+3 = 11+3$

$= 14$ tones

$2K+5 = 2\times11+5$

$= 22+5$

$= 27$ tones

$3K-10 = 3\times11-10$

$= 33-10$

$= 23$ tones

14 tones, 23 tones, 27 tones

The largest quantity is 27 tones

(c) If those who like only one type of sauce received Shs.5,000/= each from their headteacher, how much money did the headteacher give pupils altogether? (2 marks)

24 − 2 + 28 − 2
24 − 8 + 28 − 8
16 + 20
= 36 pupils

1 pupil = sh 5000
36 pupils = sh 5000 × 36
= sh 180,000

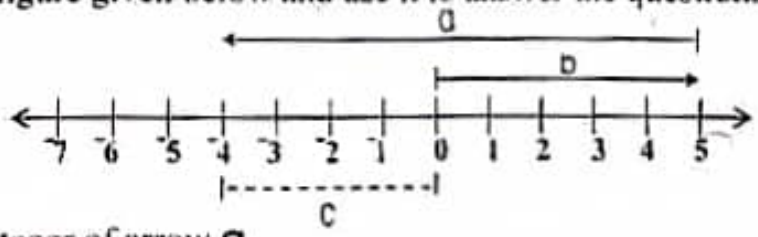
22.(a) The mean weight of 6 people is 40Kg and the average of another 4 people is 65Kg. Work out the mean weight of all the people. (3 marks)

Sum = 6 × 40kg
= 240 kg
Sum = 4 × 65 kg
= 260 kg

Mean = Sum of items / No of items
= (240kg + 260kg) / 4 + 6
= 500kg / 10

= 200 / 10
= 50 kg

(b) Study the figure given below and use it to answer the questions that follow.



(i) Give the integer of arrow a. (1 mark)

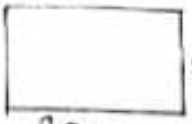
a = −9

(ii) Write the mathematical statement of the above figure. (1 mark)

b + a = c
+5 + −9 = −4

23. Anita has to fence her rectangular plot of land measuring 335 metres by 265 metres with poles placed 5 metres apart.

(a) What number of poles does she need? (3 marks)



P = 2(L + W)
= 2(335m + 265m)

P = 2(600m)
= 2 × 600m
= 1200m

No of poles = P / interval
= 1200m / 5m
= 240 poles

(b) If the cost of each pole is Shs.3,500/=, how much money will she spend on fencing her land? (2 marks)

1 pole = sh 3500
240 poles = sh 3500 × 240
= sh 840,000

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29.(a) A wheel of a vehicle covers a distance of 484 metres in 100 Revolutions. How wide is the wheel? (Take π as $^{22}/_{7}$)

C = 1 km

$\pi d = C$

$\frac{22}{7} d = 100$

(b) 40% of the members in the Music club are boys and girls are 90 in this club. Find the number of members in the club.

100% - 40%

= 60%

60% → 90

1% = 90/60

1% = 3/2

100% → 3/2 × 100

= 3 × 50

= 150 pupils

There are 150 pupils in the club

30.(a) Saleh drove from Kampala to Mbale at a steady speed of 80Km per hour for 2 hours. He then continued to Soroti at the same speed for 3 hours. Calculate his average speed for the whole journey. (3 marks)

D = S × t

= 80km/hr × 2hrs

= 80km/hr × 2hrs

= 160km

D = S × t

= 80km/hr × 3hrs

= 80km/hr × 3hrs

= 80km × 3

= 240km

AV S = TD / TT

= 160km + 240km / 2hrs + 3hrs

= 400km / 5hrs

= 80km/hr

(b) Study the clock face below and use it to answer the questions that follow

(i) If the activity that began at the afternoon time shown on the clock face above took 3 hours and 10 minutes. At what time did it end? (1 mark)

Time shown is 3:35 p.m

ET = ST + D

Hrs Min

3 : 35 pm

+3 : 10 hrs

It ended at 6 : 45 pm.

(ii) Write the ending time in 24 hour clock system. (1 mark)

Hrs min

6 : 45 pm

12 : 00 hrs

18 45 hrs

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26. The sum of values in the table below are the same diagonally, vertically and horizontally. Study it carefully and fill in the missing values to comple the table. (5 marks)

14	27	28	17
25	20	19	22
21	24	23	18
26	15	16	29

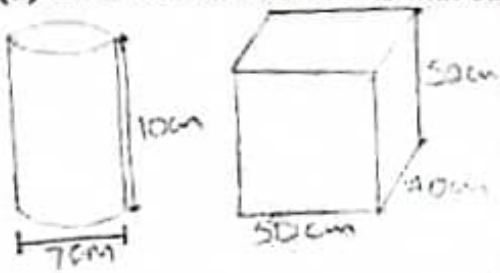
Magic sum
$26+24+19+17=86$

$d=86-(24+23+18)$
$d=86-(65)$
$d=86-65$
$=21$
$c=86-(17+18+29)$
$=86-64$
$=22$

$e=86-(28+19+15)$
$=86-70$
$=16$
$a=86-(25+21+26)$
$=86-72$
$=14$
$b=86-(20+24+15)$
$=86-59$
$=27$

27. In a factory, Blue Band cylindrical tins of diameter 7cm and height 10cm are to be packed in a box measuring 50cm by 40cm by 52cm.

(a) Find the number of tins that can be packed in the box. (2 marks)



No of tins $=\frac{L}{d}\times\frac{W}{d}\times\frac{H}{H}$
$=\frac{7}{7}\times\frac{5}{7}\times\frac{5}{10}$
$=1\times5\times5$
$=175$ Cylinders

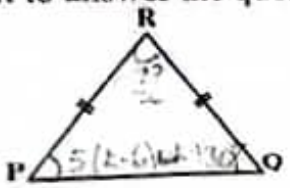
(b) Calculate the amount of space left in the box after packing all the needed Blue Band tins. (2 marks)

Volume of the box
$V=$ Base area $\times$ height
$=L\times W\times h$
$=50cm\times40cm\times52cm$
$=104,000cm^3$

Volume of all cylinders
$V=$ Base area $\times$ height
$=175\times\pi r^2h$
$=175\times\frac{22}{7}\times\frac{7}{2}\times\frac{7}{2}\times10cm$

$=25\times11\times7\times5$
$=67,375cm^3$
Volume of space left
$104,000cm^3-67,375cm^3$
$=36625cm^3$

28. In the diagram PQR in an iscoceles traingle in which angle RPQ is five times $(K-6)^0$ and angle PQR is $K+30$. Use it to answer the questions that follow.



(a) What is the value of K? (2 marks)

$5(k-6)^\circ=(k+30)^\circ$
$5k-30=k+30$
$5k-k-30=k-k+30$
$4k-30=0+30$
$4k-30=30$
$4k-30+30=30+30$
$4k+0=60$
$\frac{4k}{4}=\frac{60}{4}$
$k=15$

(b) Workout the size of angle PRQ. (2 marks)

let $\angle PQR$ be x
$\angle PQR=K+30^\circ$
$=15+30^\circ$

$\angle RPQ=5(k-6)$
$=5(15-6)$
$=5(9)$
$5\times9=45^\circ$

$\angle PRQ=?$
$45^\circ+x=180^\circ$
$10^\circ+x=180^\circ$
$90^\circ-90^\circ+x=180^\circ$

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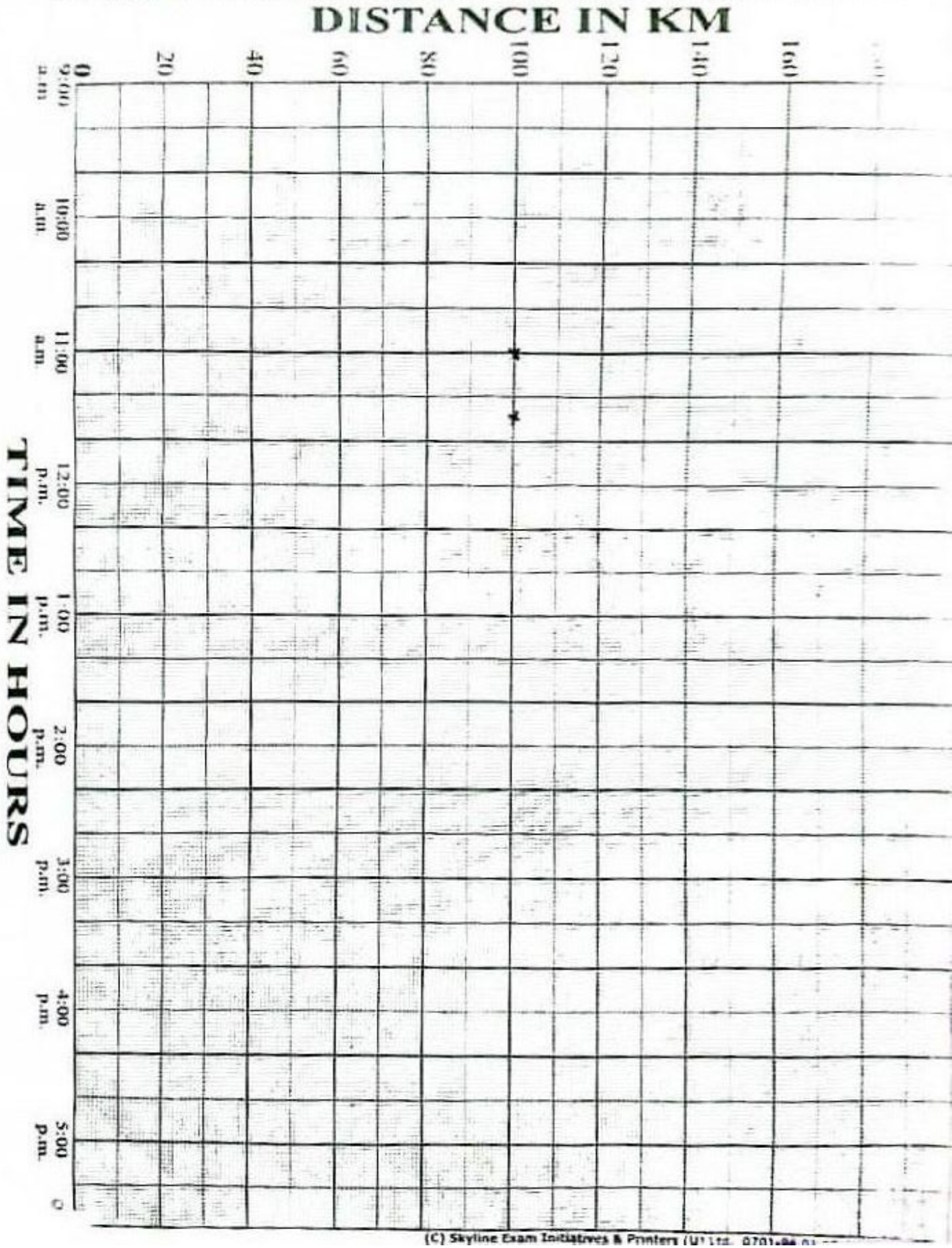
Candidate's Name:.....

School Name:.....



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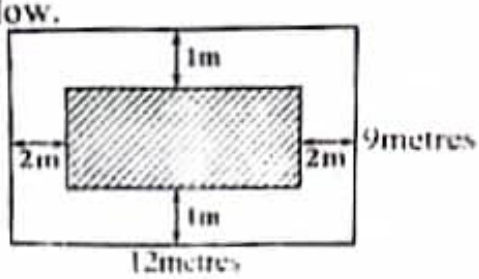
31. The figure below shows a carpet placed inside a sitting room. Study it and use it to answer the quetions that follow.



(a) Work out the area of the carpet. (2 marks)

A = L × W
= 12m × 9m
= 108m²

(b) Find the area of the floor not covered by the carpet. (2 marks)

Length = 12m − (2m + 2m)
= 12m − 4m
= 8m

W = 9m − (1m + 1m)
= 9m − (2m)
= 9 − 2m
= 7m

A = L × W
= 5m × 7m
= 56m²
Area of uncovered floor

108m² − 56m²
= 52m²

(c) Given that the cost of the carpet is Shs.36,000/= per 3 Square metres. Find the total cost of the carpet? (2 marks)

Square metres along the length

$\frac{12m}{3m} = 4m$

Width

$\frac{9m}{3m} = 3m$

Total no of square metres = 4 × 3 = 12 square metres

12 × Sh 36000
= Sh 432000

32. Mungo left Town A at 9:00a.m. and drove at 50Km per hour for 2 hours to Town B. He took half an hour mending the tyre of his vehicle at Town B. He then left Town B and drove for 1 hour and 30 minutes at a steady speed of 40Km per hour to Town C. He rested for 30 minutes at Town C. He then left Town C and drove back to Town A at a steady speed of 80Km/hr.

(a) Draw Mungo's journey on the graph provided on Page 10. (3 marks)

(b) Calculate the average speed for the whole journey. (2 marks)

D = S × T
= 50km/hr × 2hrs
= $\frac{50km}{hr} \times 2hrs$
= 100km

Resting time
= 30min

D = S × T
= 40km/hr × 1½ hrs
= $\frac{40km}{hr} \times 1\frac{1}{2}hrs$
= 48km × $\frac{3}{2}$
= 60km

Resting time
30minute

Total distance
100km + 60km
= 160km

T = $\frac{D}{S}$
= $\frac{160km}{80km/hr}$
= 2hrs

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