



SHINE STAR EXAMINATIONS BOARD

POST REGISTRATION SET

2025

MATHEMATICS

PRIMARY SEVEN

Time allowed: 2 hours 30 minutes

Random No.						Personal No.		

Candidate's name: ..NYEKO MICHEAL.....

Candidate's Signature: ..0761389233 / 0767944791.....

District ID:

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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**. This paper has **13 pages printed** 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 be easily read may lead to **loss of marks**.
7. Do not fill anything in the table indicated **"FOR EXAMINER"**

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		

@SHINE STAR EXAMINATIONS BOARD 0781306601 [C.E.O] TURN OVER

SECTION A: (40 MARKS)

Answer **all** the questions in this section.

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

1. Workout: $45 - 23$

$$\begin{array}{r} 45 \\ - 23 \\ \hline 22 \end{array}$$

$$45 - 23 = 22 \quad B2$$

2. Write "Fourteen thousand, forty two" in figures.

THOUSAND	UNITS
14	42

$$\begin{array}{r} 14,000 \\ + 42 \\ \hline 14,042 \end{array} \quad M1$$

3. Simplify: $5k - (k - 2)$

$$5k - (k - 2)$$

$$5k - k + 2 \quad M1$$

$$4k + 2 \quad A1$$

4. Round off 4.46 to the nearest ones.

O	T _{THS}	H _{THS}
4	4	6
R _{PV}	D _{PV}	

$$\begin{array}{r} 44 \\ + \end{array}$$

$$\begin{array}{r} 4 \\ + 0 \\ \hline 4 \end{array} \quad M1$$

$$4.46 \approx 4 \quad A1$$

2

5. Given that $2p + 20^\circ$, 30° and 90° are angles on a straight line.

Find the value of p .

$$2p + 20^\circ + 30^\circ + 90^\circ = 180^\circ$$

$$2p + 140^\circ = 180^\circ$$

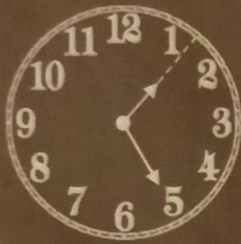
$$2p + 140^\circ - 140^\circ = 180^\circ - 140^\circ$$

$$2p = 40^\circ$$

$$\frac{2p}{2} = \frac{40^\circ}{2}$$

$$p = 20^\circ \text{ A7}$$

6. Tr. Micah had his lunch at the time shown on the clock face below. At what time did he have his lunch?



At 1:25 p.m. B2

7. The mean of y , 5, 3 and 2 is 3. Find the value of y .

$$\text{Mean} = \frac{\text{Sum}}{\text{Number}}$$

$$3 = \frac{y + 5 + 3 + 2}{4}$$

$$4 \times 3 = \frac{y + 10}{4} \times 4$$

$$12 = y + 10$$

$$12 - 10 = y + 10 - 10$$

$$2 = y$$

$$\therefore y = 2 \text{ A7}$$

8. Given that $M = \{\text{all vowel letters}\}$. Calculate the number of subsets in set M .

$$M = \{a, e, i, o, u\}$$

$$M = 5 \text{ elements}$$

$$\text{Subset} = 2^n$$

$$\text{Subset} = 2^5$$

$$= (2 \times 2) \times (2 \times 2) \times 2$$

$$\text{Subset} = (4 \times 4) \times 2$$

$$\text{Subset} = 16 \times 2$$

$$\text{Subset} = 32$$

$$\text{No of subset in set M} = 32 \text{ A7}$$

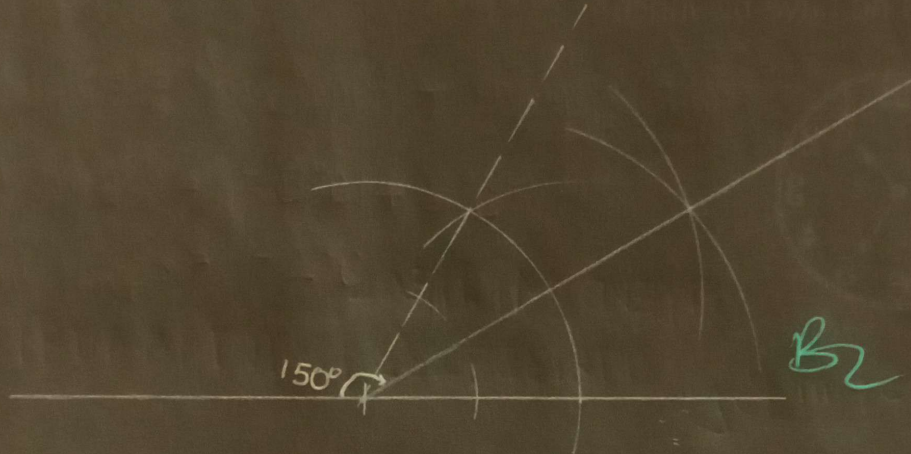
Turn Over

9. Convert 23_{ten} into a binary base.

B	N	R
2	23	1
2	11	1
2	5	1
2	2	0
2	1	1

$$23_{\text{ten}} = 10111_{\text{two}} \quad \text{A7}$$

10. Using a pair of compasses, ruler and a very sharp pencil only, construct an angle of 150° in the space below.



11. The cost of 3kg of maize flour is sh. 7,500. If Moses paid sh. 125,000 for a sack of maize flour at the same rate, calculate the weight of the sack of maize flour.

Maize
3kg of weights
3kg cost sh. 7,500
1kg costs sh. 7,500
31
1kg costs sh. 2,500

Weight of the Sack
 $\left(\frac{\text{sh. } 125,000}{\text{sh. } 2,500} \right) \text{ kg}$
50 kg. A7

12. After selling a phone at sh. 90,000, Ssentongo realized a loss of sh. 30,000. What was the cost price of the phone?

Selling Price = sh. 90,000

Loss = sh. 30,000 MM

Loss = Selling Price - Cost Price

sh. 30,000 = sh. 90,000 - Cost Price

Cost Price = sh. 90,000 - sh. 30,000

Cost Price = sh. 60,000

Loss = Cost Price - Selling Price

sh. 30,000 = C.P. - sh. 90,000

C.P. = sh. 30,000 + sh. 90,000

C.P. = sh. 120,000. A7

13. Given that a is a third of b and $b = 2$. Find the value of $a + b$

$$\begin{array}{l|l|l}
 a = \frac{1}{3}b & a + b & 2\frac{2}{3} \text{ A} \\
 b = 2 & \frac{2}{3} + \frac{2}{1} & \\
 a = \frac{1}{3} \times 2 & \frac{2+6}{3} & \\
 a = \frac{2}{3} & \frac{8}{3} \text{ M} &
 \end{array}$$

14. Muwanguzi has 7 t . shirts and 5 shirts in his suitcase. Calculate his probability of selecting a t . shirt at random from the suitcase.

$$\text{Prob} = \frac{n(E)}{n(S)}$$

$$\text{Prob} = \frac{7}{7+5} \text{ M}$$

$$\text{Prob} = \frac{7}{12} \text{ A}$$

15. Find the biggest number of pupils who can be given 12 or 15 apple and no apple remains.

$$F_{12} = \{ \textcircled{1} 2, \textcircled{3} 4, 6, 12 \}$$

$$F_{15} = \{ \textcircled{1} \textcircled{3} 5, 15 \} \text{ M}$$

$$\underline{\underline{3 \text{ pupils} \text{ A}}}$$

16. The price of a watermelon was decreased from sh. 5000 to sh.4000. Calculate the percentage decrease in the price of the watermelon.

$$\% \text{ decrease} = \frac{\text{Decrease}}{\text{Original Price}} \times 100\%$$

$$\begin{aligned}
 \% \text{ decrease} &= \frac{(5,000 - 4,000)}{5,000} \times 100\% \\
 &= \frac{1,000}{5,000} \times 100\% \text{ M}
 \end{aligned}$$

$$\% \text{ decrease} = 20\% \text{ A}$$

Turn Over

17. Convert 10m/sec into km/hr.

$$\begin{aligned}
 10m &\rightarrow km \\
 1m &= 0.001 km \\
 10m &= \left(\frac{1}{1000} \times \frac{10}{1} \right) km \\
 &= \frac{1}{100} km \\
 S &\rightarrow hr \\
 3600s &= 1h \\
 1s &= \left(\frac{1}{3600} \right) h \\
 \text{But } S &= D/T
 \end{aligned}$$

$$S = \left(\frac{1}{100} \div \frac{1}{3600} \right) km/hr$$

$$S = \left(\frac{1}{100} \times \frac{3600}{1} \right) km/hr$$

$$S = 36 km/hr$$

$$10m/sec = 36 km/hr \quad \underline{\underline{A}}$$

18. The temperature of juice in a fridge dropped by $3^{\circ}C$ to $-5^{\circ}C$. What was the old temperature of juice?

$$\text{Old temp}^{\circ} = \text{New temp}^{\circ} + \text{change in temp}^{\circ}$$

$$\text{old temp}^{\circ} = -5^{\circ}C + 3^{\circ}C$$

$$\text{old temp}^{\circ} = -2^{\circ}C \quad \underline{\underline{A}}$$

19. A farmer planted 100 eucalyptus trees in his garden in a straight line. The distance from one tree to another tree was 600cm each. Calculate the distance from the first to the last tree in metres.

$$\text{No of intervals (gaps)} \quad 6m = 600cm$$

$$(100 - 1)$$

$$99 \text{ gaps} \quad \underline{\underline{my}}$$

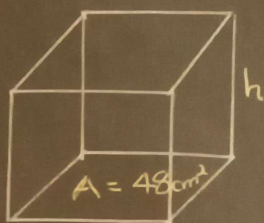
$$1m = 100cm$$

$$\left(\frac{600}{100} \right) m = 600cm$$

$$\text{Distance} = (99 \times 6)m$$

$$= 594m \quad \underline{\underline{A}}$$

20. The base area of a rectangular box is $48cm^2$. Find its height if it has a volume of 200 cubic centimetres.



$$V = L \times W \times H$$

$$200cm^3 = 48cm^2 \times H$$

$$\frac{200cm^3}{48cm^2} = \frac{48Hcm^2}{48cm^2} \quad \underline{\underline{my}}$$

$$H = 4.2cm$$

$$\text{Height} = 4.2cm \quad \underline{\underline{A}}$$

$$\begin{array}{r}
 0.16 \\
 6 \overline{) 10} \\
 \underline{6} \\
 40 \\
 \underline{36} \\
 4
 \end{array}$$

SECTION B: (60 MARKS)

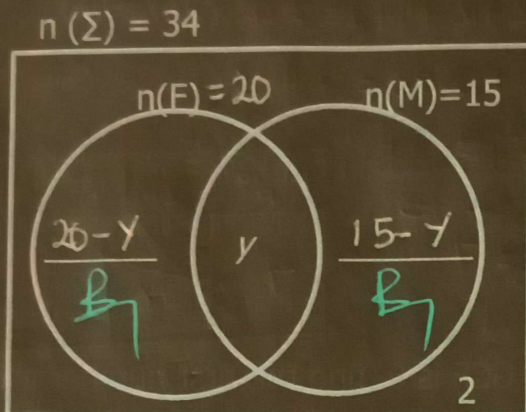
Answer **all** questions in this section

Marks for each question are indicated in brackets.

21. At a wedding ceremony, 34 guests were invited. 15 guests ate meat (M), 20 guests ate fish (F), y guests ate both fish and meat while 2 guests did not eat any of the two dishes.

a) Use the above information to complete the Venn diagram below.

(2marks)



b) How many guests did not eat fish?

(3marks)

$$(20 - y) + y + (15 - y) + 2 = 34$$

$$20 - y + y + 15 - y + 2 = 34$$

$$(20 + 15 + 2) - y + y - y = 34$$

$$37 - y = 34$$

$$37 - 37 - y = 34 - 37$$

22. Given the digits 4, 0, 6

a) Write all the possible 3-digit numbers that can be formed using all the above digits.

(2marks)

406	604
460	640

406, 460, 604 and 640

b) Find the **sum** of the largest and smallest 3-digit numbers formed in question 22(a) above. **(2marks)**

$$\begin{array}{r} 640 \\ + 406 \\ \hline 1046 \end{array}$$

23. a) The sum of 3 consecutive counting numbers is 24. If the first number is k , find the value of k .

1st no	2nd no	3rd no	Sum
k	$k+1$	$k+2$	24

$$k + (k+1) + (k+2) = 24$$

$$k + k + 1 + k + 2 = 24$$

$$k + k + k + 1 + 2 = 24 \quad (2marks)$$

$$3k + 3 = 24 - 3$$

$$\frac{3k}{3} = \frac{21}{3}$$

$$k = 7$$

1st no	2nd no	3rd no
7	8	9

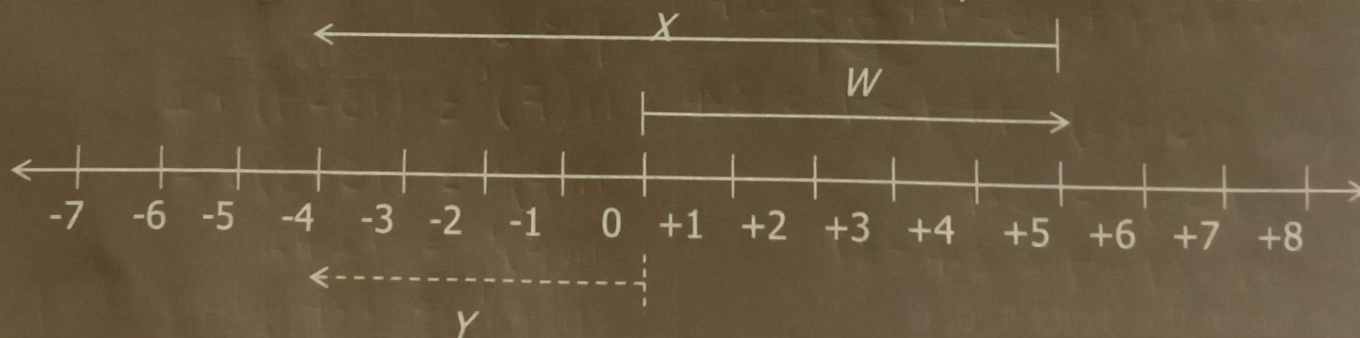
b) The LCM of two numbers is 36 and their GCF is 6, find the first number if the second number is 18. **(2marks)**

$$L.C.M \times G.C.F = \text{Product of two numbers.} \quad \text{The first no} = 12. \quad A$$

$$\frac{36 \times 6}{18} = \frac{\text{First no} \times 18}{18}$$

$$12 = \text{First no}$$

24. Study the number line below and use it to answer the questions that follow.



a) Name the integers represented by;

(1mark@)

(i) $Y = -4$ B

(ii) $W = 5$ B

(iii) $X = -9$ B

b) Write down the mathematical sentence for the above number line. (2marks)

$$W + X = Y$$

$$+5 + -9 = -4 \quad B_2$$

25. A certain school, the number of pupils who reported on the first day for term one in P.7, P.6 and P.5 was in the ratio of 3: 5: 2 respectively. If 18 more pupils reported in P.6 than P.7, how many pupils reported in each class? (6marks)

P.7	P.6	P.5	Total ratio
3	5	2	10

Difference in the ratio of P.6 and P.7

$$(5 - 3) = 2 \quad B_1$$

Total n^o of pupils in the whole school

$$18 \div \frac{2}{10}$$

$$18 \times \frac{10}{2} = 90 \text{ pupils} \quad M$$

26. a) Solve $2^{3k} \div 8 = 1$

$$2^{3k} \div 8 = 1$$

$$2^{3k} \div 2^3 = 2^0$$

$$3k - 3 = 0$$

$$3k - 3 + 3 = 0 + 3$$

$$\frac{3k}{3} = \frac{3}{3}$$

$$k = 1 \quad A_1$$

$$P.7 = \left(\frac{3}{10} \times 90 \right) \text{ pupils} = 27 \text{ pupils} \quad A_1$$

$$P.6 = \left(\frac{5}{10} \times 90 \right) \text{ pupils} = 45 \text{ pupils} \quad A_1$$

$$P.5 = \left(\frac{2}{10} \times 90 \right) \text{ pupils} = 18 \text{ pupils} \quad (2\text{marks})$$

$$\begin{array}{r|l} 2 & 9 \\ \hline 2 & 4 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

b) Solve the inequality; $7 < 3p - 2 < 16$ and find the solution set. (3marks)

$$7 < 3p - 2 < 16$$

$$7 + 2 < 3p - 2 + 2 < 16 + 2$$

$$\frac{9}{3} < \frac{3p}{3} < \frac{18}{3}$$

$$3 < p < 6 \quad M$$

Or $6 > p > 3$
Solution set
 $p = \{4, 5\} \quad A_1$

27. Babirye Edith bought the items as shown in the table below.

Item	Quantity	Unit cost	Total cost
Meat	1 ½ kg	Sh. 15,000	Sh. <u>22,500</u> B
Sugar	3kg	Sh. <u>4,800</u> B	Sh. 14,400
Soap	<u>3</u> B bars	Sh. 6,500	Sh. 19,500
TOTAL EXPENDITURE			Sh. <u>56,400</u> B (4marks)

a) Complete the table above.

Meat

$$1\frac{1}{2} \text{ kg} = \frac{3}{2} \text{ kg}$$

$$\frac{3}{2} \times \text{sh } 7,500$$

$$3 \times \text{sh } 7,500$$

$$\text{sh } 22,500 \text{ B}$$

Sugar

$$\text{sh } \left(\begin{array}{r} 4,800 \\ + 4,400 \\ \hline 3 \end{array} \right)$$

$$\text{sh } 4,800 \text{ B}$$

Soap

$$\left(\begin{array}{r} 393 \\ + 4,500 \\ \hline 6,500 \end{array} \right) \text{ bars}$$

$$13, \text{ } 3 \text{ bars B}$$

$$\begin{array}{r} 22,500 \\ + 14,400 \\ + 19,500 \\ \hline \text{sh } 56,400 \end{array}$$

b) If she remained with sh. 3,600 after buying all the items, how much money did she have at first? (2marks)

$$\begin{array}{r} \text{sh } 56,400 \\ + \text{sh } 3,600 \text{ M} \\ \hline \text{sh } 60,000 \end{array}$$

$$\text{She had sh } 60,000 \text{ A}$$

28. Nakalema filled $\frac{4}{5}$ of a tank with water. The tank had a diameter of 70cm and height of 100cm. Calculate the litres of water needed to fill the tank to its full capacity. (5marks)

Volume of the tank

$$V = \pi r^2 h$$

$$V = \frac{22}{7} \times 35\text{cm} \times 35\text{cm} \times 100\text{cm}$$

$$V = 22 \times 35\text{cm} \times 5\text{cm} \times 100\text{cm}$$

$$V = 385,000\text{cm}^3$$

Capacity in litres

$$\left(\frac{V}{1000}\right) \text{ litres}$$

$$\left(\frac{385,000}{1000}\right) \text{ litres}$$

$$385 \text{ litres}$$

Amount of water needed to fill the tank

$$\frac{5}{5} - \frac{4}{5} = \frac{1}{5}$$

$$\left(\frac{1}{5} \times 385\right) \text{ litres}$$

$$77 \text{ litres}$$

29. In a basket of 45 eggs, 20% of them are bad eggs and the rest are good eggs.

a) How many good eggs are in the basket? (3marks)

% of good eggs

$$(100 - 20)\%$$

$$80\%$$

$$(4 \times 9) \text{ eggs}$$

$$36 \text{ eggs}$$

There are 36 good eggs in the basket.

No of good eggs

$$\left(\frac{4}{5} \times 45\right) \text{ eggs}$$

b) Express the number of bad eggs as a fraction of all the eggs in the lowest term. (2marks)

Bad eggs

$$(45 - 36) \text{ eggs}$$

$$9 \text{ eggs}$$

$$\frac{9}{45}$$

$$\frac{1}{5}$$

11

Turn Over

30. At a stationary, the cost of a pen is twice the cost of a pencil. The cost of a book is sh. 1,200 more than the cost of a pen. If Ssempija paid sh.900 for a pen and a pencil, how much will she pay for the two books?
(5marks)

Let the cost of a pencil be x .

a pencil	a pen	a book
x	$2x$	$2x + \text{sh } 1,200$
Total = sh. 900		

$$x + 2x = \text{sh } 900$$

$$\frac{1-3x}{31} = \frac{\text{sh } 900}{31}$$

$$x = \text{sh } 300$$

The cost of a book -
 $2x + \text{sh } 1,200$
 $(2 \times \text{sh } 300) + \text{sh } 1,200$
 $\text{sh } 600 + \text{sh } 1,200$
 $\text{sh } 1,800$

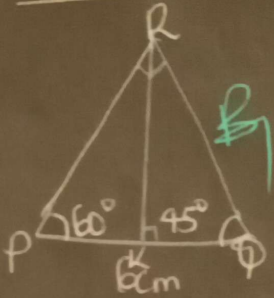
1 book costs sh. 2,400

2 books cost sh. $2 \times 2,400$
 $\text{sh } 4,800$

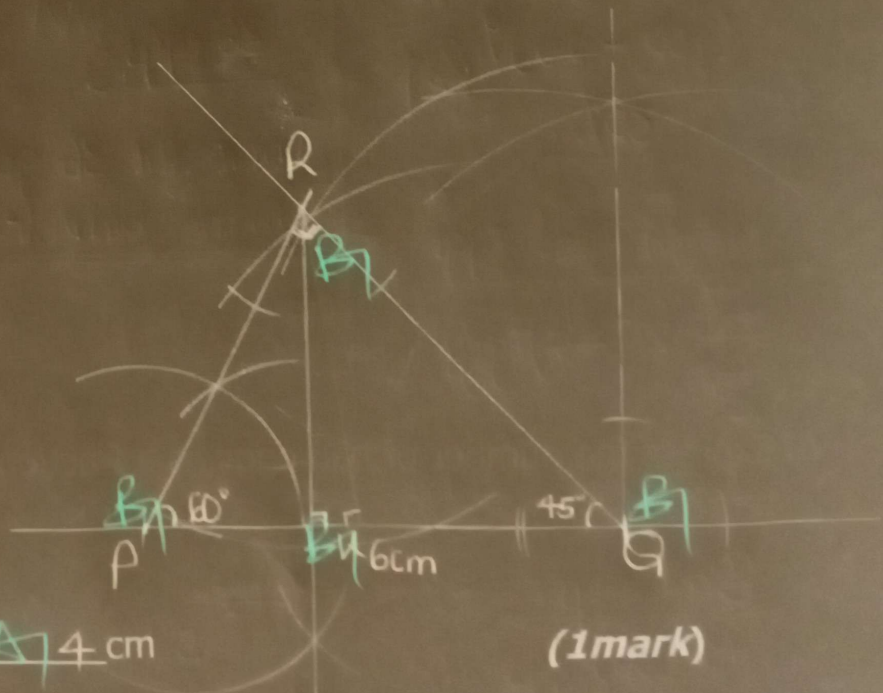
31. Using a pair of compasses, ruler and a pencil only;

- a) Construct a triangle **PQR** in which **PQ**=6cm, angle **RPQ** = 60° and angle **PQR** = 45° . Construct a perpendicular from **R** to meet **PQ** at **K**. (5marks)

Sketch drawing



Accurate drawing



b) Measure **RK** = 4 cm

(1mark)

Distance covered in the first
Journey

$$S = \frac{D}{T}$$

$$D = S \times T$$

$$D = (50 \times 2) \text{ km}$$

$$D = 100 \text{ km}$$

Distance in the 2nd
Journey after traffic

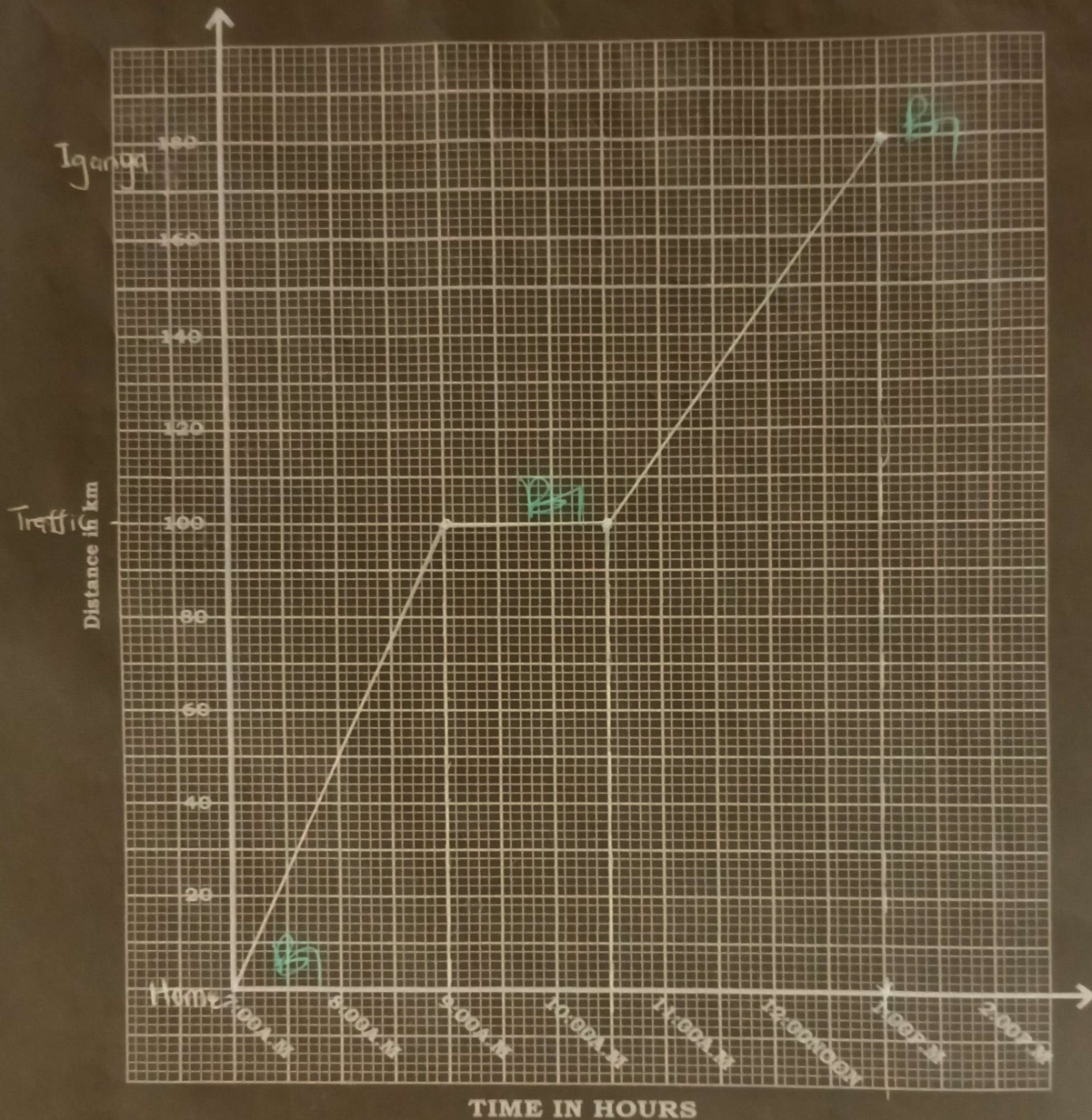
$$D = S \times T$$

$$D = \frac{16}{\text{h}} \times \frac{5}{\text{h}}$$

$$D = (16 \times 5) \text{ km}$$

$$D = 80 \text{ km}$$

32. A cyclist left home for Iganga town at 7:00a.m using a speed of 50km/h for 2 hours. He found traffic jam which took 1 ½ hours. He later continued to Iganga town using a speed of 32km/h for 2 ½ hours.
- (a) Use the above information to show the cyclist journey on the graph below.
- (3marks)



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

$$A.V.S = \frac{T.D.C}{T.T.T}$$

END

$$T.D.C = 180 \text{ km}$$

$$T.T.T = 2 \text{ hours} + 1\frac{1}{2} \text{ hours} + 2\frac{1}{2} \text{ hours} \\ = 6 \text{ hours}$$

$$A.V.S = \left(\frac{180}{6} \right) \text{ km/h}$$

$$A.V.S = 30 \text{ km/h}$$