



SUREKEY EDUCATION SERVICES

PRIMARY SEVEN UNIQUE SERIES

2025

MATHEMATICS

OFFICIAL MARKING GUIDE

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.

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** questions in this Section
Questions **1** to **20** carry two marks each

1. Workout: $\frac{1}{3} \times \frac{1}{5}$

$$\frac{1 \times 1}{3 \times 5}$$

$$\frac{1}{15}$$

2. Express 654 in Roman numerals.

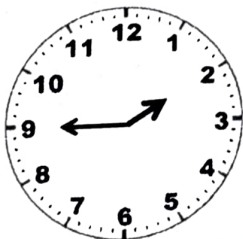
600	50	4
CD	L	IV

$$654 = CDLIV$$

3. Given that Set Z = $\{\triangle, \bigcirc, \square\}$. Find the number of proper subsets in Set Z.

$$\begin{aligned} \text{Number of proper subsets} &= 2^n - 1 \\ &= 2^3 - 1 \\ &= (2 \times 2 \times 2) - 1 \\ &= 8 - 1 \\ &= 7 \end{aligned}$$

4. Write the morning time shown on the clock face below in 24-hour system.



Morning Time is 2:45a.m

$$2:45a.m. = 02:45hrs$$

5. Find the next term in the sequence below;

$$k - 2, 2k - 4, 4k - 8, 8k - 16, \dots, 16k - 32$$

$$\frac{2(k - 2)}{2k - 4}$$

$$\frac{2(2k - 4)}{4k - 8}$$

$$\frac{2(4k - 8)}{8k - 16}$$

$$\frac{2(8k - 16)}{16k - 32}$$

6. The cost price of a box of Nivana water is Sh.5,000. A shopkeeper sold it at a loss of 8%. Calculate the cost at which the box was sold.

Selling percentage

$$100\% - 8\% = 92\%$$

Selling price

$$92\% \text{ of sh } 5,000$$

$$\frac{92}{100} \times \text{sh } 5,000$$

$$\begin{array}{l} 92 \times \text{sh } 50 \\ \text{sh } 4600 \end{array}$$

Method 2

$$8\% \text{ of sh } 5,000$$

$$\frac{8}{100} \times \text{sh } 5,000$$

$$100$$

$$8 \times \text{sh } 50$$

$$\text{sh } 400$$

Selling Price

$$\begin{array}{r} 410 \\ \text{sh } 5000 \end{array}$$

$$- \text{sh } 400$$

$$\hline \text{sh } 4,600$$

7. Write 0.0026 in scientific notation.

Method 1

$$\begin{aligned} 0.0026 \times 10 &= 0.026 \\ 0.026 \times 10 &= 0.26 \\ 0.26 \times 10 &= 2.6 \\ 0.0026 &= 2.6 \times 10^{-3} \end{aligned}$$

Method 2

$$\begin{aligned} 0.0026 \times 10^1 &= 0.0026 \\ 0.0026 \times 10^2 &= 0.26 \\ 0.0026 \times 10^3 &= 2.6 \\ 0.0026 &= 2.6 \times 10^{-3} \end{aligned}$$

Method 3

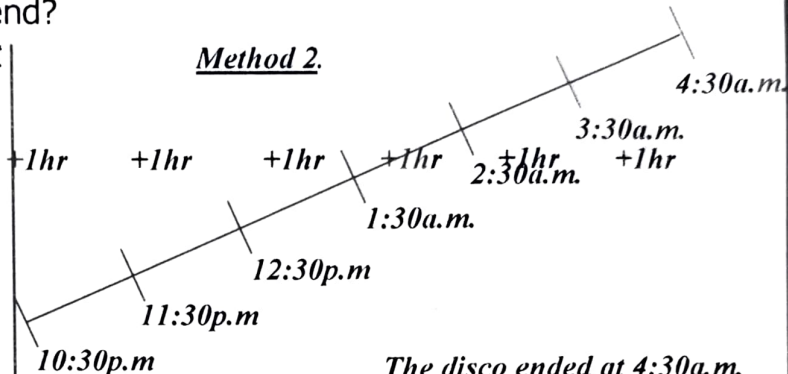
$$\begin{aligned} 0.0026 \div 10^{-1} &= 0.0026 \\ 0.0026 \div 10^{-2} &= 0.26 \\ 0.0026 \div 10^{-3} &= 2.6 \\ 0.0026 &= 2.6 \times 10^{-3} \end{aligned}$$

8. It took 6 hours for a disco dance which had started at 10:30p.m. to stop. At what time did the disco end?

From 10:30p.m to 12:00 midnight

$$\begin{array}{r} \text{Hr Min} \\ 11 \cancel{12} : \cancel{00}^{60} \\ - 10 : 30 \\ \hline 1 : 30 \\ \text{Ending Time} \\ \text{Hr Min} \\ 5 \cancel{6} : \cancel{00}^{60} \\ - 1 : 30 \\ \hline 4 : 30 \text{ a.m.} \end{array}$$

Method 2.



9. Express 500 metres as a percentage of 2 kilometres.

2 kilometres to metres

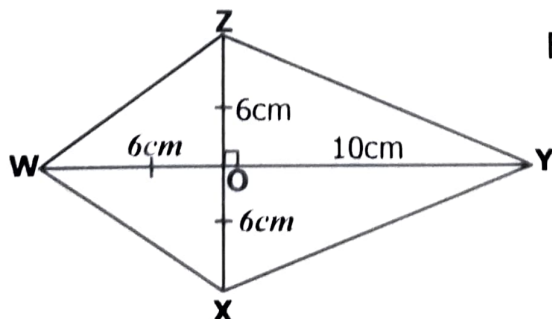
$$\begin{aligned} 1 \text{ km} &= 1000\text{m} \\ 2 \text{ km} &= 1000 \times 2 \\ 2 \text{ km} &= 2000\text{m} \end{aligned}$$

$$\begin{aligned} \frac{500}{2000} \times 100\% \\ \frac{5}{20} \times 100\% \\ 5 \times 5\% \\ 25\% \end{aligned}$$

10. A rectangular prism contains 36 blue and black pens. The probability of picking at random a black pen is $\frac{1}{3}$. How many more blue pens than black pens are in that prism?

<u>Blue</u>	<u>More fraction</u>	<u>More blue pens</u>	<u>Method 2</u>	<u>Number of blue pens</u>
$\frac{3-1}{3}$	$\frac{2-1}{3}$	$\frac{1}{3} \times 36$	<u>Number of black pens</u>	36 - 12
$\frac{3}{3}$	$\frac{3}{3}$	12	$\frac{1}{3} \times 36$	24 blue pens
$\frac{3-1}{3}$	$\frac{2-1}{3}$	12 more blue pens	12	<u>More blue pens</u>
$\frac{2}{3}$	$\frac{1}{3}$		12 black pens	24 - 12
				12 more blue pens

11. A pupil made a playing kite WXYZ below with diagonal stick WY bisecting diagonal stick XZ at point O. OZ = 6cm and OY = 10cm.



Find the area of the kite the pupil made.

$$\begin{aligned} \text{Area} &= \frac{d_1 \times d_2}{2} \\ &= \frac{12\text{cm} \times 16\text{cm}}{2} \\ &= 6\text{cm} \times 16\text{cm} \\ &= 96\text{cm}^2 \end{aligned}$$

12. Tonny got 40% more sweets than Daniel. If Tonny got 6 more sweets than Daniel, how many sweets did they share?

$$\begin{aligned}
 \text{Number of sweets} &= 6 \div \frac{40}{100} \\
 &= 6 \times \frac{100}{40} \\
 &= 3 \times 5 \\
 &= 15 \text{ sweets}
 \end{aligned}$$

13. Solve for m : $2\frac{1}{2}m - 4 = 11$.

$$\frac{5m}{2} - 4 = 11$$

$$\frac{5m}{2} \times 2 - (4 \times 2) = (11 \times 2)$$

$$5m - 8 = 22$$

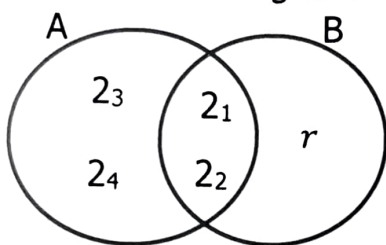
$$5m - 8 + 8 = 22 + 8$$

$$5m = 30$$

$$\frac{5m}{5} = \frac{30}{5}$$

$$m = 6$$

14. The LCM of two numbers A and B, whose prime factors are represented in the Venn diagram below is 80. Use it to find the value of r .



$$\text{Product of Union} = \text{LCM}$$

$$2 \times 2 \times 2 \times 2 \times r = 80$$

$$16r = 80$$

$$\frac{16r}{16} = \frac{80}{16}$$

$$r = 5$$

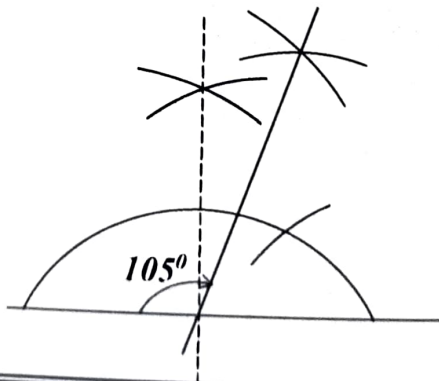
15. What is the sum of 1101_{two} and 111_{two} ?

$$\begin{array}{r}
 1101_{\text{two}} \\
 + 111_{\text{two}} \\
 \hline
 10100_{\text{two}}
 \end{array}$$

$$2 \div 2 = 1 \text{ rem } 0$$

$$3 \div 2 = 1 \text{ rem } 1$$

16. Using a ruler, a pencil and a pair of compasses only, construct an angle of 105° in the space provided below.



17. Workout $(0.36 - 0.06) \div 0.10$.

$$\frac{36}{100} - \frac{6}{100}$$

$$\frac{36 - 6}{100}$$

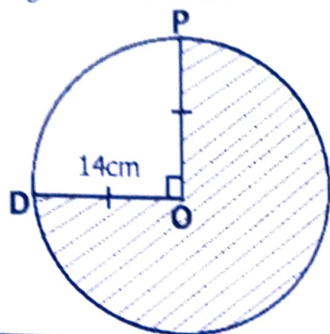
$$\frac{30}{100}$$

$$\frac{30}{100} \div \frac{10}{100}$$

$$\frac{30 \times 100}{100 \times 10}$$

$$3$$

18. In the figure below, length $PO = OD = 14\text{cm}$. Find the area of the shaded region of the circle. (Use $\pi = \frac{22}{7}$)



$$\begin{aligned}
 \text{Area} &= \frac{3\pi r^2}{4} \\
 &= \frac{3}{4} \times \frac{22}{7} \times 14\text{cm} \times 14\text{cm} \\
 &= 3 \times 11 \times 1\text{cm} \times 14\text{cm} \\
 &= 33\text{cm} \times 14\text{cm} \\
 &= \underline{462\text{cm}^2}
 \end{aligned}$$

Method 2

Area of Circle

$$\begin{aligned}
 \text{Area} &= \pi r^2 \\
 &= \frac{22}{7} \times 14\text{cm} \times 14\text{cm} \\
 &= 22 \times 2\text{cm} \times 14\text{cm} \\
 &= 44\text{cm} \times 14\text{cm} \\
 &= 616\text{cm}^2
 \end{aligned}$$

Area of Quadrant

$$\begin{aligned}
 \text{Area} &= \frac{1\pi r^2}{4} \\
 &= \frac{1}{4} \times \frac{22}{7} \times 14\text{cm} \times 14\text{cm} \\
 &= 1 \times 11 \times 1\text{cm} \times 14\text{cm} \\
 &= 11\text{cm} \times 14\text{cm} \\
 &= 154\text{cm}^2
 \end{aligned}$$

Shaded area

$$\begin{aligned}
 &616\text{cm}^2 - 154\text{cm}^2 \\
 &462\text{cm}^2
 \end{aligned}$$

19. Write the solution set for; $-3 \leq x - 1 \leq 4$.

$$\begin{aligned}
 -3 + 1 &\leq x - 1 + 1 \leq 4 + 1 \\
 -2 &\leq x \leq 5
 \end{aligned}$$



$$x : x = \{-2, -1, 0, 1, 2, 3, 4, 5\}$$

20. A fuel tank is $\frac{3}{5}$ full. If $\frac{1}{3}$ of the fuel is used, find the fraction of the fuel that remains.

Fraction used

$$\frac{1}{3} \text{ of } \frac{3}{5}$$

$$\frac{1 \times 3}{3 \times 5}$$

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

Fraction that remains

$$\frac{3}{5} - \frac{1}{5}$$

$$\frac{3-1}{5}$$

$$\frac{2}{5}$$

SECTION B: 60 MARKS

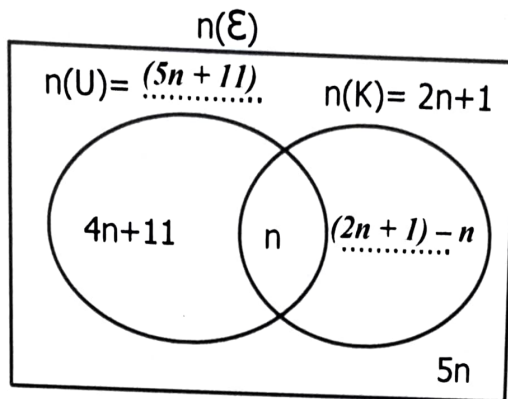
Answer all questions in this section

Marks for each question are indicated in brackets.

21. The Venn diagram below shows the number of tourists who visited Uganda (U), Kenya (K) and other countries.

(a) Complete it correctly.

(02 Marks)



- (b) Given that the number of tourists who visited Uganda was as many as those who did not visit Uganda. Find the number of tourists who visited Kenya.

(03 Marks)

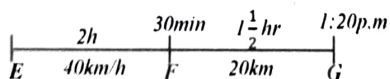
<u>Value of n</u>	
$(5n + 11)$	$= (2n + 1) - n + 5n$
$5n + 11$	$= 2n + 1 + 4n$
$5n + 11$	$= 2n + 4n + 1$
$5n + 11$	$= 6n + 1$
$5n - 6n + 11$	$= 6n - 6n + 1$
$-n + 11$	$= 1$

$-n + 11 - 11$	$= 1 - 11$
$-n$	$= -10$
$-1(-n)$	$= -1(-10)$
n	$= 10$
$n(k)$	$= 2n + 1$
	$= (2 \times 10) + 1$
	$= 20 + 1$
$n(k)$	$= 21$

22. A cyclist rode from town E to town F at a speed of 40km/h for 2 hours. He rested for 30 minutes and then continued to town G where he arrived at 1:20p.m. after having moved for $1\frac{1}{2}$ hours.

(a) At what time did he set off at town E?

(02 Marks)



$S.T$	$=$	$E.T - D$
<u>1:20pm to 24 hour clock</u>		
<u>Hr Min</u>		
<u>12 : 00</u>		
<u>+ 1 : 20</u>		
<u>13 : 20hrs</u>		

Duration

$2hr + \frac{1}{2}hr + 1\frac{1}{2}hr$
$2hr + 1hr + \frac{1}{2}hr + \frac{1}{2}hr$
$3hr + 1hr$
$4hr$

Starting time

<u>Hr Min</u>
<u>13 : 20</u>
<u>- 4 : 00</u>
<u>9 : 20 a.m.</u>

He set off at town E at 9:20a.m.

- (b) If the distance between towns **F** and **G** is 20km, workout the motorist's average speed for the whole journey. (03 Marks)

Distance from E to F

$$\begin{aligned} \text{Distance} &= S \times T \\ &= \frac{40\text{km}}{1\text{hr}} \times 2\text{hr} \\ &= 40\text{km} \times 2 \\ &= 80\text{km} \end{aligned}$$

$$\begin{aligned} \text{Average speed} &= \frac{\text{Total distance}}{\text{Total time}} \\ &= \frac{80\text{km} + 20\text{km}}{4\text{hr}} \\ &= \frac{100\text{km}}{4\text{hr}} \\ &= 25\text{km/hr} \end{aligned}$$

23. Emilly, Shanitah and Mustafah brought a total amount of Sh.26,000 for pocket money. Shanitah brought Sh.2,000 more than Mustafah, and Sh.1,000 less than Emilly. Calculate the amount of money brought by Emilly. (04 Marks)

Let Emilly's amount be m

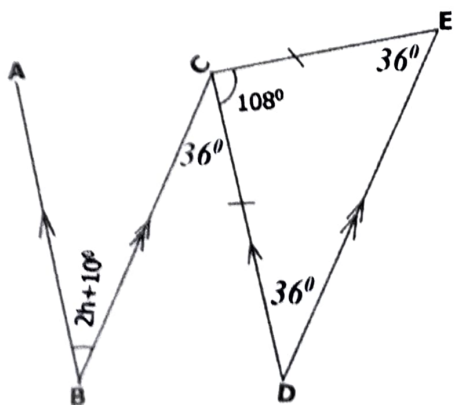
Emilly	Shanitah	Mustafah	Total
m	m - sh 1,000	m - sh 3,000	sh 26,000

$$\begin{aligned} \frac{3m}{3} &= \frac{\text{sh } 30,000}{3} \\ m &= \text{sh } 10,000 \end{aligned}$$

Emilly brought
sh 10,000

$$\begin{aligned} m + m - \text{sh } 1,000 + m - \text{sh } 3,000 &= \text{sh } 26,000 \\ m + m + m - \text{sh } 1,000 - \text{sh } 3,000 &= \text{sh } 26,000 \\ 3m - \text{sh } 4,000 &= \text{sh } 26,000 \\ 3m - \text{sh } 4,000 + \text{sh } 4,000 &= \text{sh } 26,000 + \text{sh } 4,000 \\ 3m &= \text{sh } 30,000 \end{aligned}$$

24. In the diagram below, line **AB** is parallel to line **CD**. Line **BC** is parallel to line **DE**. **CDE** is an Isosceles triangle and angle **ECD** = 108°. Study the diagram carefully and use it to answer the questions that follow.



- (a) Workout the size of angle **CDE**.

Let CDE be m

(02 Marks)

$$\begin{aligned} m + m + 108^\circ &= 180^\circ \\ 2m + 108^\circ &= 180^\circ \\ 2m + 108^\circ - 108^\circ &= 180^\circ - 108^\circ \\ 2m &= 72^\circ \\ \frac{2m}{2} &= \frac{72^\circ}{2} \\ m &= 36^\circ \\ \text{CDE} &= 36^\circ \end{aligned}$$

- (b) Find the value of **h**. (02 Marks)

$$\begin{aligned} 2h + 10^\circ &= 36^\circ \\ 2h + 10^\circ - 10^\circ &= 36^\circ - 10^\circ \\ 2h &= 26^\circ \\ \frac{2h}{2} &= \frac{26^\circ}{2} \\ h &= 13^\circ \end{aligned}$$

25. At Pabo Public School, 25% of the Primary Seven pupils who sat for PLE 2024 were boys. 60% of the girls passed the exams while 30% of the boys failed the exams. The school had 30 girls who sat for the exams.

(a) Find the total number of pupils at the school who sat for the exams.

Boys	Girls
25%	100% - 25%
	75%

$$\begin{aligned}
 \text{Number of pupils} &= 30 \div \frac{75}{100} \\
 &= 30 \times \frac{100}{75} \\
 &= 10 \times 4 \\
 &= 40 \text{ pupils}
 \end{aligned}
 \quad (02 \text{ Marks})$$

(b) How many pupils passed the exams? (03 Marks)

Girls who passed

$$\frac{60}{100} \times 30$$

$$6 \times 3$$

$$18 \text{ girls}$$

Number of boys

$$40 - 30$$

$$10 \text{ boys}$$

Boys who passed

$$100\% - 30\%$$

$$70\%$$

$$\frac{70}{100} \times 10$$

$$7 \text{ boys}$$

$$18 + 7$$

$$25 \text{ pupils}$$

26. (a) Simplify: $\frac{6}{8} \times \left(\frac{8}{18} \div \frac{3}{4} \right) + 1\frac{2}{3}$ (03 Marks)

$$\left(\frac{6}{8} \times \frac{8}{18} \times \frac{4}{3} \right) + \frac{5}{3}$$

$$\frac{4}{9} + \frac{5}{3}$$

$$\frac{4 + 15}{9}$$

$$\frac{19}{9}$$

$$2\frac{1}{9}$$

(b) Use the distributive property to workout; (02 Marks)

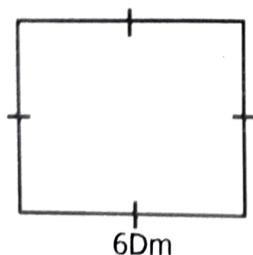
$$(18 \div 5) - (8 \div 5)$$

$$(18 - 8) \div 5$$

$$10 \div 5$$

$$2$$

27. Joshua planted Pine tree seedlings on the square plot of land below at intervals of 200dm.



(a) How many pine tree seedlings did he plant around his square plot of land? (04 Marks)

$$\begin{aligned}
 \text{Perimeter} &= 4s \\
 &= 4 \times s \\
 &= 4 \times 6Dm \\
 &= 24Dm
 \end{aligned}$$

$$\frac{24 \text{ DM to dm}}{1 \text{ Dm} = 100dm}$$

$$24Dm = (100 \times 24)dm$$

$$24Dm = 2400dm$$

Number of pine trees

$$= \frac{\text{Perimeter}}{\text{Interval}}$$

$$= \frac{2400dm}{200dm}$$

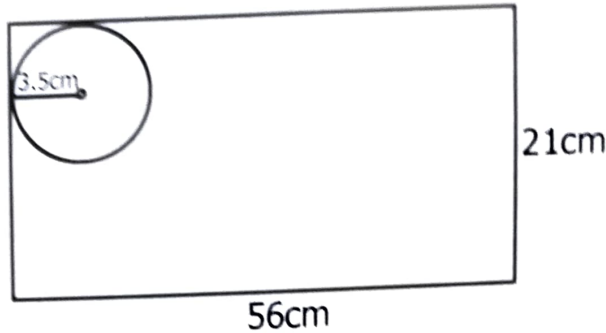
$$= 12 \text{ pine trees}$$

- (b) Find the area of the square plot of land above.

(02 Marks)

$$\begin{aligned} \text{Area} &= S \times S \\ &= 6 \text{ Dm} \times 6 \text{ Dm} \\ &= 36 \text{ Dm}^2 \end{aligned}$$

28. Hajati kneaded a rectangular dough measuring 56cm by 21cm from which she cut circular pancakes of radius 3.5cm as shown below.



- (a) Find the number of pancakes Hajati cut out of the dough.

(02 Marks)

<u>Diameter</u>	<u>Number of pancakes</u>	8×3
$(3.5\text{cm} \times 2)$	$\frac{L}{D} \times \frac{W}{D}$	24 pancakes
$\frac{35}{10} \times 2$	$\frac{56}{7} \times \frac{21}{7}$	
7cm		

- (b) Work out the area of the dough that was left after cutting out all the pancakes. (Use $\pi = \frac{22}{7}$)

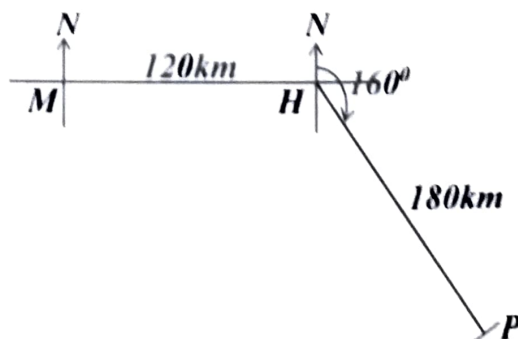
(03 Marks)

$$\begin{aligned} &\text{Area of dough} - \text{area of pancakes} \\ &(L \times W) - (\pi r^2 \times 24) \\ &(56\text{cm} \times 21\text{cm}) - \left(\frac{22}{7} \times \frac{7\text{cm}}{2} \times \frac{7\text{cm}}{2} \times 24\right) \\ &(1176\text{cm}^2 - (11 \times 1\text{cm} \times 7\text{cm} \times 12)) \\ &1176\text{cm}^2 - 924\text{cm}^2 \\ &252\text{cm}^2 \end{aligned}$$

29. A hospital (H) is 120km East of the Mosque (M). A Police station (P) is 180km from the hospital on a bearing of 160° .

- (a) Draw a sketch diagram to show the location of the three places.

(01 Mark)



- (b) Using a scale of 1cm to represent 30km, draw an accurate diagram to show the three places above. (03 Marks)

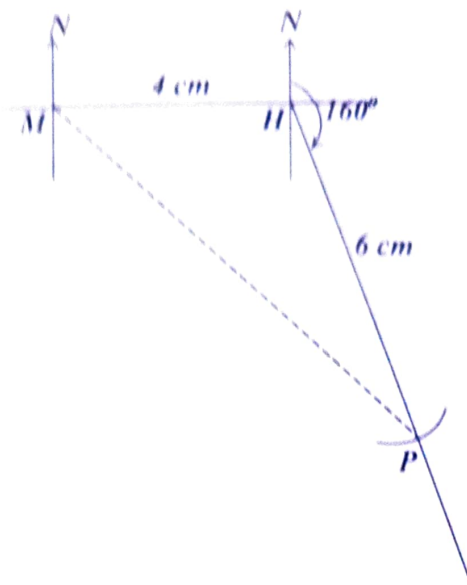
Drawing length

$$\left(\frac{120}{30} \right) \text{ cm}$$

$$4 \text{ cm}$$

$$\left(\frac{180}{30} \right) \text{ cm}$$

$$6 \text{ cm}$$



- (c) Find the shortest distance between the Mosque and the Police station. (01 Mark)

$$8.3 \text{ cm}$$

Distance

$$\left(\frac{83 \times 30}{10} \right) \text{ km}$$

$$(83 \times 3) \text{ km}$$

$$249 \text{ km}$$

30. The table below shows the rate of buying and selling currencies at Cente Forex Bureau. Study and use it to answer the questions that follow.

Currency	Buying rate in Ugsh.	Selling rate in Ugsh.
1 Kenya shillings (Ksh)	27	30
2 US dollars (\$)	7,400	7,600
1 pound sterling (£)	4,200	4,280

- (a) How much in Uganda shillings (Ugsh), can one get from US \$700?

$$\text{US \$ 2} = \text{Ugsh } 7,400$$

$$\text{US \$ 1} = \frac{\text{Ugsh } 7,400}{2}$$

$$\text{US \$ 1} = \text{Ugsh } 3700$$

$$\text{US\$ 700} = \text{Ugsh } 3700 \times 700$$

$$\text{US\$ 700} = \text{Ugsh } 2,590,000$$

(03 Marks)

- (b) Convert £5,500 to Kenya shillings.

(03 Marks)

$$\begin{aligned}
 £ 1 &= \text{Ugsh } 4,200 \\
 £ 5,500 &= \text{Ugsh } 4,200 \times 5,500 \\
 £ 5,500 &= \text{Ugsh } 23,100,000 \\
 \text{Ugsh } 1 &= \text{Ksh } 30 \\
 \text{Ugsh } 23,100,000 &= \frac{23,100,000}{30} \\
 \text{Ugsh } 23,100,000 &= \text{Ksh } 770,000
 \end{aligned}$$

31. The exterior and interior angles of a regular polygon are in the ratio of 2:7 respectively.

- (a) Name the polygon.

(03 Marks)

ext <	Int <	sum
2	7	9
		180°

$$\begin{aligned}
 \text{Number of sides} &= \frac{360^\circ}{40^\circ} \\
 &= 9 \text{ sides} \\
 \text{The polygon is a nonagon}
 \end{aligned}$$

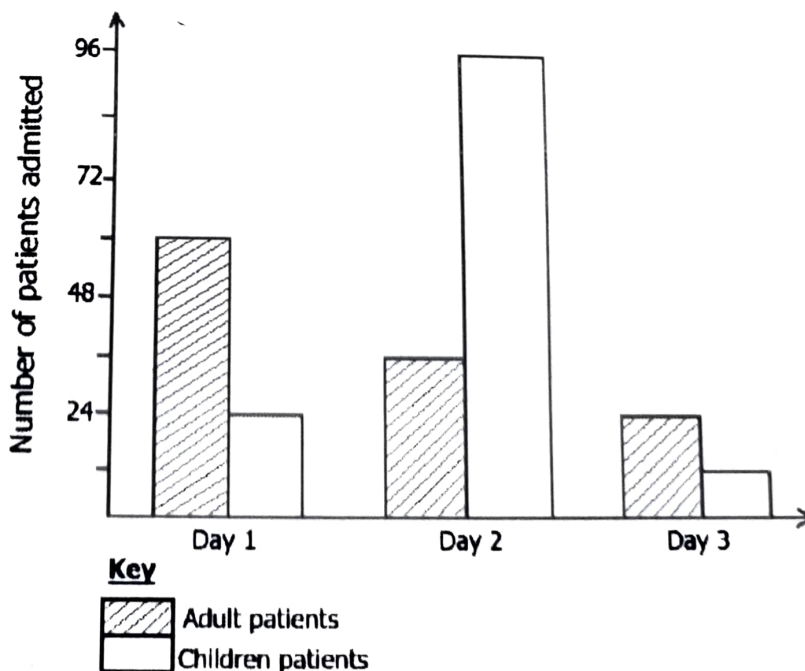
$$\begin{aligned}
 \text{Ext angle} &= \frac{2}{9} \times 180^\circ \\
 &= 2 \times 20^\circ \\
 &= 40^\circ
 \end{aligned}$$

- (b) Calculate its interior angle sum.

(02 Marks)

$$\begin{aligned}
 \text{Interior angle sum} &= 180^\circ(n - 2) \\
 &= 180^\circ(9 - 2) \\
 &= 180^\circ \times 7 \\
 &= 1260^\circ
 \end{aligned}$$

32. The graph below shows adults and children patients who were admitted at Entebbe Grade B hospital in three days of a week. Study it carefully and use it to answer the questions that follow.



- (a) How many children were admitted in the hospital in the three days?

(01 Mark)

Day 1	Day 2	Day 3
24	96	12

$$\begin{aligned}\text{Number of children} &= 24 + 96 + 12 \\ &= 132\end{aligned}$$

- (b) Express the number of adult patients admitted on the third day as a ratio of children patients admitted on the second day. (02 Marks)

$$\begin{aligned}24 &: 96 \\ 1 &: 4\end{aligned}$$

- (c) Calculate the average number of adult patients admitted in the three days. (02 Marks)

$$\begin{aligned}\text{Average} &= \frac{\text{Sum of data}}{\text{Number of data}} \\ &= \frac{60 + 36 + 24}{3} \\ &= \frac{120}{3} \\ &= 4\end{aligned}$$