CITY PARENTS' SCHOOL SINCE 1999
P.7 MATHEMATICS HOLIDAY WORK TERM II 2020

SCHOOL: _____

Name: _____Index No. _____

Stream : _____

SET I

ALGEBRA

SECTION A (12 Marks)

1. Simplify: 2 (x + 1) – (x + 13)

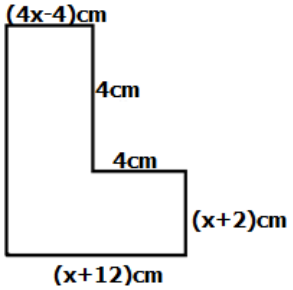
2. Solve: 5 – 3q = 17

3. Subtract 2x + 3 from 3x – 5

4. Solve : $\frac{12}{m} + 3 = 5$

5. If **a = $^{-}$2**, **b = 3** and **c = 4**, find the value of **b(a^3 – c)**

6. Work out the value of **X** on the diagram below.

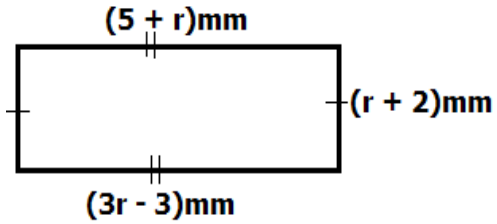


SECTION B (13 Marks)

7. a) Solve for P: $3 - 2(P - 3) + 3 = 6$ **(2marks)**

b) The cost of a book is twice the cost of a rubber, and the cost of a rubber is shs. 350 more than the cost of a pen. Find the cost of a pen if all the three items cost shs. 3050. **(3marks)**

8. Below is a rectangle. Study it and answer the questions that follow.



a) Find the value of **r**. **(2marks)**

b) What is the square of the length of the rectangle? **(2marks)**

9. a) Solve: $6 - 0.2y = y$ **(2marks)**

b) Factorize completely.
$2\pi r^2 + 2\pi rh$ **(2marks)**

SET II
NUMBER PATTERNS AND SEQUENCE:
SECTION A (12 Marks)

1. Find the next number in the sequence.

   1, 8, 27, 64, _____

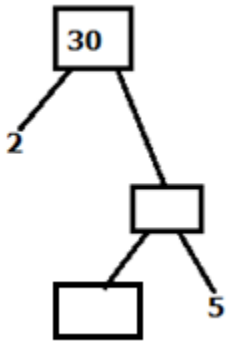
2. Write 72 as a product of its prime factors.

3. Find the sum of prime numbers between 90 and 100.

4. Find the square root of $3\frac{1}{16}$.

5. Without dividing, show which of the numbers 140 and 5070 is divisible by 3.

6. Fill in the missing numbers.



SECTION B (13marks)

7. Complete the magic square below. (5marks)

___	_____	28	17
25	20	19	___
___	24	23	18
26	15	___	29

8. The Lowest Common Multiple (LCM) of two numbers is 72 and their Greatest Common Factor (GCF) is 6. If one of the numbers is 24, find the second number. (3marks)

9. The sum of 4 consecutive integers is 18. Find these integers. (2marks)

10. The prime factors of 12 and 90 are given below;

    Use the given prime factors above to find the Lowest Common Multiple (LCM) of 12 and 90. (3marks)

SET III
FRACTIONS
SECTION A (12 Marks)

1. Work out: $1\frac{3}{7} + 7\frac{2}{3} \div 3\frac{5}{6}$

2. Express 0.122… as a vulgar fraction in its lowest term.

3. The ratio of boys to girls in a class is 3:5. If the class consists of 40 pupils, how many more girls than boys are in that class?

4. 8 men can slash a school compound in nine days. How many more men are needed to slash the same compound in only three days if they work at the same rate?

5. A trader deposited Shs. 500,000 in Centenary Bank at an interest rate of 10% p.a for 6 months. Find the simple interest he earned after that period.

6. By selling a geometry set at Shs. 7,200, a shop keeper makes a profit of 20%. Find the cost price of the geometry set.

7. Simplify: $2\frac{2}{9} \; X \; \frac{2}{5}$

8. Work out the value of $12\frac{1}{2}$% of sh. 20,000.

9. Simplify: 0.37 – 1.03 + 2.6.

10. Work out: (10 x 3.5) + (6.5 x 10) using distributive property.

11. Round off 29.96 to the nearest tenth.

SECTION B (13 marks)

12a) Simplify: $\frac{4}{5} \times \frac{3}{7} + \frac{9}{14} + 2\frac{7}{15}$ **(3marks)**

b) Work out; $\frac{3.9+3.5}{0.06 \times 0.5}$ **(3marks)**

13. In a village, there are 20% more males than females.

a) Find the percentage for females. (1mark)

b) If there are 1200 males, find the total population of the whole village. (2marks)

9. A man spends 40% of his salary on food, 75% of the remainder on rent and he banks the rest. If his salary is sh. 650,000, how much does he spend on rent? (4marks)

10. In a meeting attended by 560 people, $\frac{4}{7}$ were women, $\frac{3}{8}$ were men and the rest were children.
a) How many more women attended than the children? **(3marks)**

b) Express the number of children as a ratio of the total number of women and men.
(2marks)

11. A primary seven girl read $\frac{3}{10}$ of the pages of her novel on Monday, $\frac{4}{10}$ of the remainder on Tuesday and she was left with 84 pages to complete. How many pages has the whole novel?
(5marks)

12. Two taps A and B are connected to a water tank. Tap A can fill the tank within 4 hours. Tap B can empty it in 5 hours. When the tank was $\frac{1}{4}$ full, the taps were opened at the same time. How long did it take to fill the tank? **(4marks)**

13. A tank is $\frac{3}{5}$ full of petrol, when $\frac{1}{4}$ of the petrol was sold; only 7,200 litres remained in the tank. How many litres of petrol does the tank contain when it is $\frac{5}{8}$ full? **(5marks)**

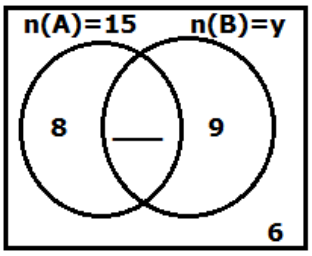
SET IV
SET CONCEPTS
SECTION A (12Marks)

1. Set **K** = {4, 8, 12, 16, 20 .} Name set **K.**

2. Given that set **P** = {1, 2, 3, 4, 5, 6 } and set **Q** = {1, 3, 5, 7, 9} . List the elements in the complement **P**∩**Q**.

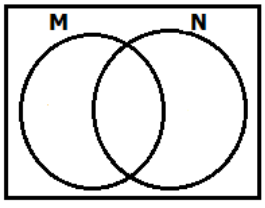
3. Draw a Venn diagram to show that all goats (G) are animals (A).

4. In the figure below, find the value of **y**.



5. If a set has 64 subsets, how many elements does it have?

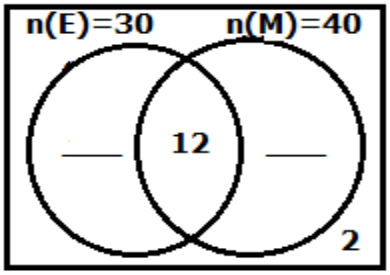
6. Shade **(M**∪**N)'** in the Venn diagram below.



SECTION B. (13 Marks)

7. In a class, 30 pupils like English (E), 40 pupils like Mathematics (M), (m + 10) pupils like English only, 12 pupils like both subjects and two pupils like neither of the two subjects.

a) Complete the Venn diagram below. **(2marks)**

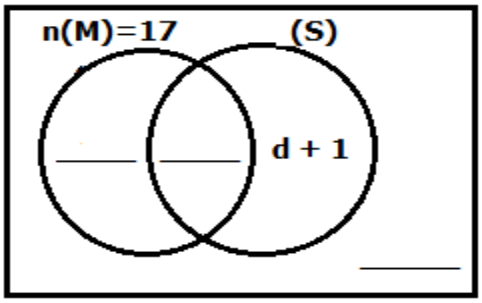


b) Find the value of **m**. **(1mark)**

c) Find the probability of picking a pupil at random who likes mathematics only. **(1mark)**

8. In a school, **17** teachers teach **Mathematics (M), 8** teachers teach both **Science** and **Mathematics**, while **(d – 2)** teachers teach neither of the mentioned subjects.

a) Complete the Venn diagram below. **(3marks)**



b) If 17 teachers do not teach Mathematics, find the number of teachers who teach only science. **(2marks)**

SET V

MEASUREMENTS:

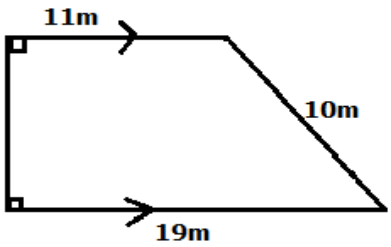
LENGTH, MASS AND CAPACITY

SECTION A (2 Marks each)

1. Express 15.4 litres in cm^3.

2. How many 350g packets can be got from 3.15kg of rice?

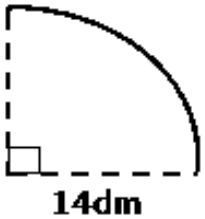
3. Calculate the area of the figure below.



4. 44 poles were placed round a circular plot of land at intervals of 2.5 metres. Find the circumference of the plot.

5. How many square tiles of side 20cm each can be laid on a rectangular floor measuring 600cm by 500cm?

6. Find the length of the arc in the figure below.

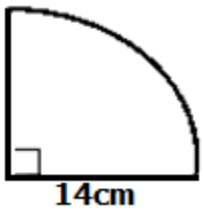


7. Change 450 grammes into Kilogrammes.

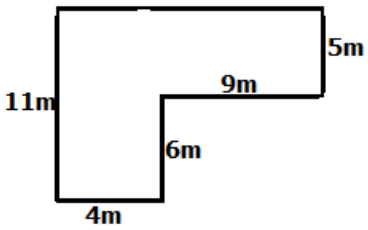
8. Bottles of 300 millilitres (ml) were used to fill a nine litre bucket with water. Find the number of full 300 ml bottles that were used.

9. Change 3 square metres into squares centimetres.

10. Calculate the perimeter of the figure below.



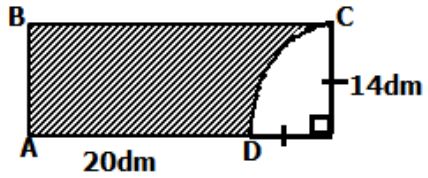
11. Study the figure below and find its perimeter.



12. Calculate the radius of a circle whose circumstance is 88dm.

SECTION B (13marks)

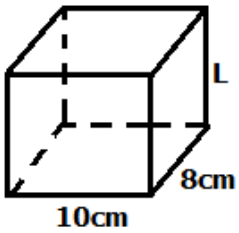
13. Use the figure below to answer the questions that follow.



(a) Find the area of the shaded part. (3marks)

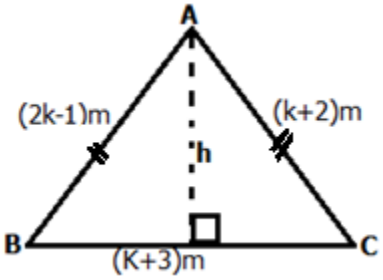
(a) Calculate the distance around figure **ABCD**. (2marks)

14. The sum of the lengths of all the edges of the prism below is 96cm.



(a) Find the length of edge **L.** (2marks)

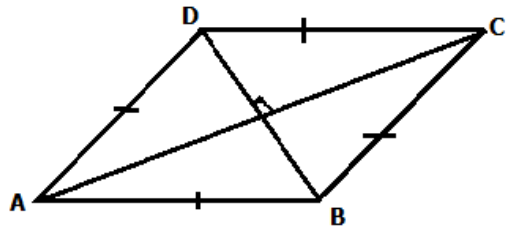
15. ABC is an Isosceles triangle. Use it to answer the questions that follow.



(a) Find the value of **K.** (2marks)

b) Work out its area. (2marks)

16. The perimeter of the rhombus below is 60cm. Diagonal **AC = 24cm**.



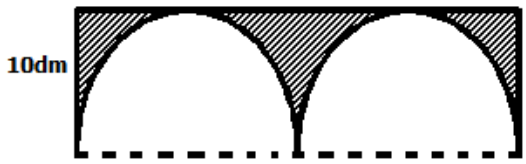
a) Calculate the length of diagonal **BD**. **(2marks)**

b) Work out its area. **(1mark)**

17. A tyre of a bicycle has a diameter of 42cm. If the bicycle is to cover 1.98km,
a) Find the number of revolutions that the tyre will make. **(3marks)**

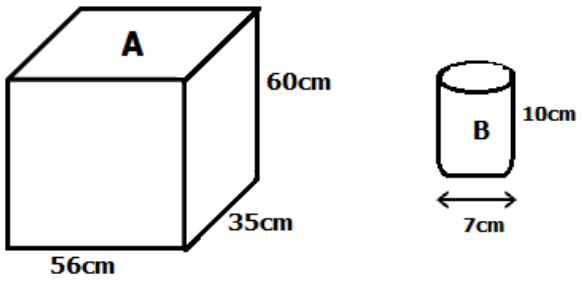
b) Given that the tyre makes 300 revolutions per minute, how long will it take the bicycle to cover that distance? **(1mark)**

18. Study the figure below and use it to answer the questions that follow.



Find the area of the shaded part in the figure above. **(Take π = 3.14)** **(3marks)**

19. Tins of size **B** were packed in Box **A** as shown below.



a) How many tins were packed in the first layer? **(1mark)**

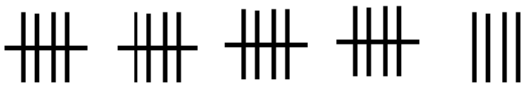
b) Calculate the total number of tins that were packed in the box. **(2marks)**

SET VI

TOPIC: DATA HANDLING

SECTION A (12 marks)

1. Mr. Kizito counted pupils with black shoes in a class and tallied them as follows;



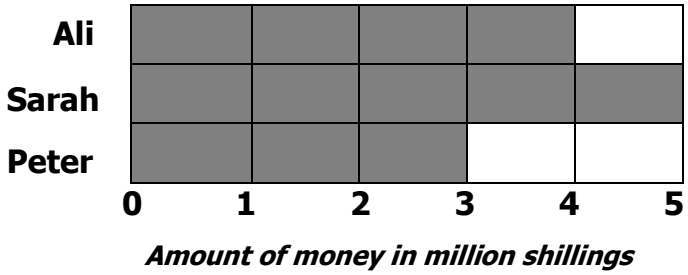
How many pupils had black shoes?

2. Find the average of 8, 5, 3, 4.

3. If  represents 5 trees. How many trees are represented by:

4. The average mass of 5 bags of cement is 60kg. Find the total number of kg in the 5 bags of cement.

5. The graph represents the amount of money won by 3 students in a sports betting.



How much more money did Ali get than Peter?

6. Auma scored the following marks;

Eng: 68, Sci: 72, SST: 68, MTC: 92 and computer 50.

Find the modal frequency.

SECTION B (13 marks)

7. A farmer planted his land as follows;

Maize $\frac{2}{5}$ of the land.

Beans $\frac{1}{3}$ of the land.

Peas $\frac{1}{5}$ of the land and elephant grass on the remainder. (4marks)

Draw a pie-chart to represent the above information.

8. Study and complete the table below. (3marks)

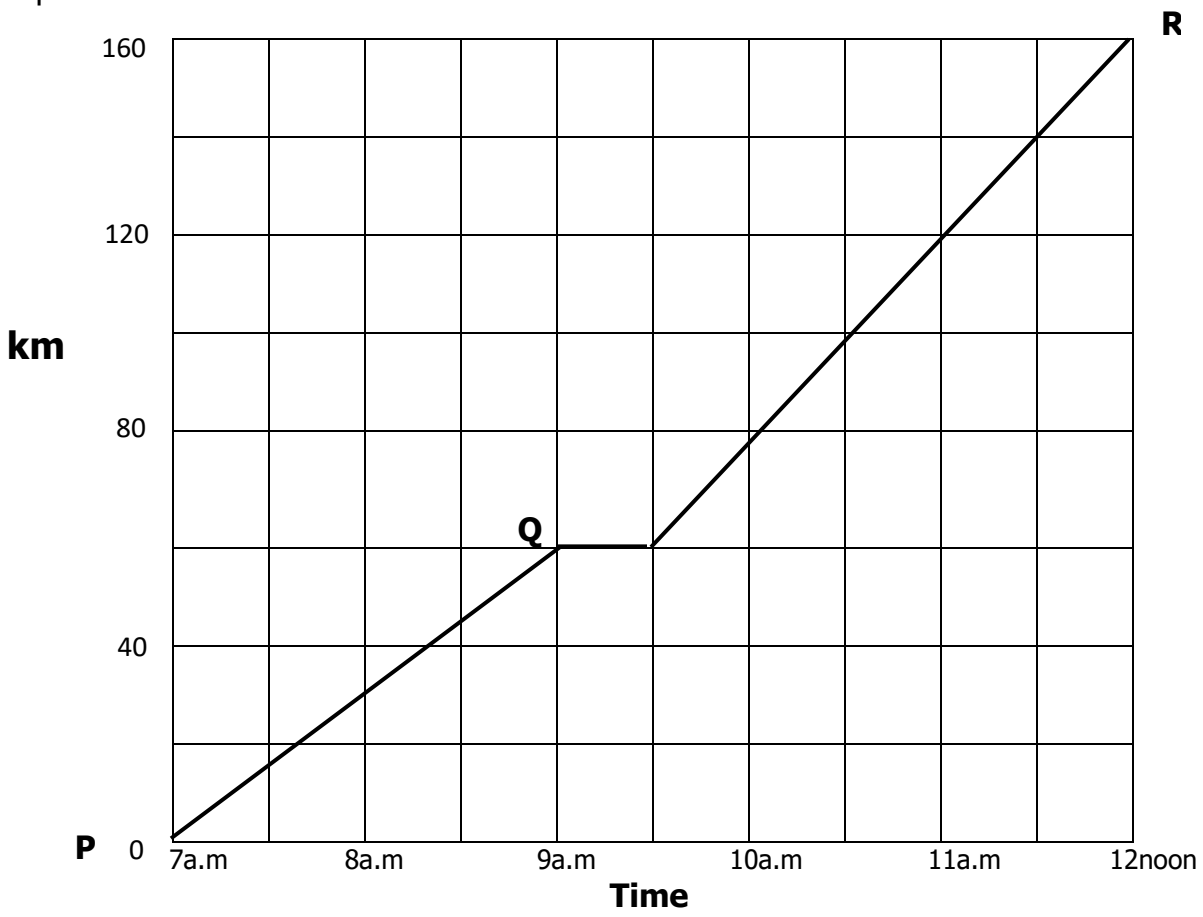
Marks	**Frequency**	**Total**
54	3	162
64	2	_____
_____	3	210
85	_____	340

b) Find the median mark. (1mark)

c) Find the mean. (1mark)

d) Find the range. (1 mark)

9. A motorist drove from town **P** to town **R** via town **Q**. Study the graph and answer the questions that follow.



a) How far is town **Q** from **P**? (1 mark)

b) For how long did the motorist stay at town **Q**? (1 mark)

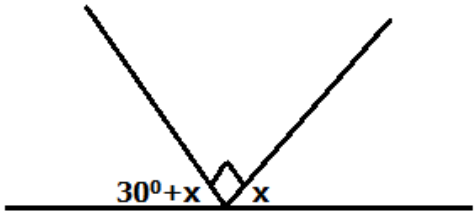
c) Find the scale on vertical axis. (1 mark)

SET VII

TOPIC: GEOMETRIC CONSTRUCTION

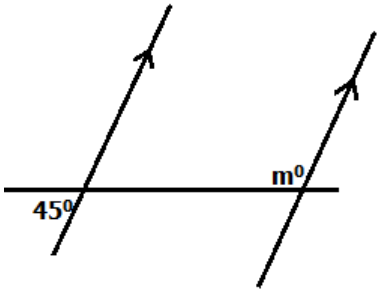
SECTION A (12 marks)

1. Find the value of **x** in the figure below.



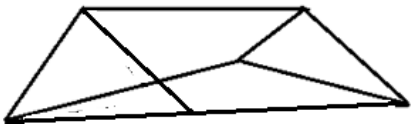
2. Draw an angle of 60^0 using a protractor.

3. Find the size of the angle m in the diagram below.



4. Using a ruler a pencil and a pair of compasses only construct an angle of 135^0.

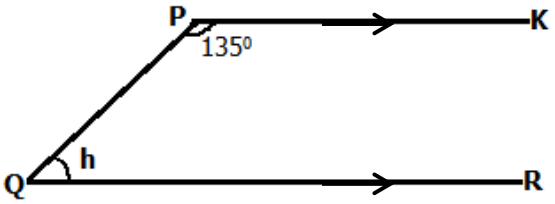
5. Name the prism drawn below.



6. Show the lines of the folding symmetry in the figure below.

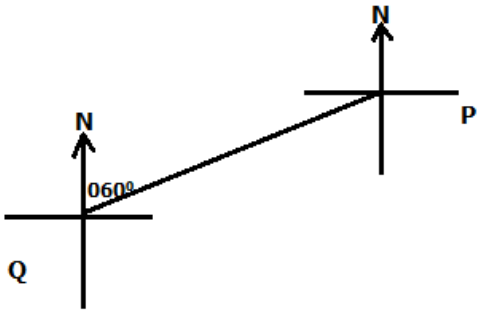
7. The complement of y is 60^0. Find the value of **Y.**

8. In the figure below **PK** is parallel to **QR**. Find the value of **h**.

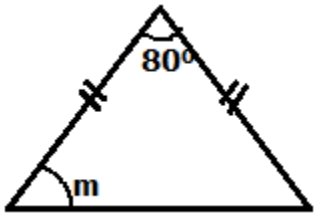


9. Using a ruler, a pencil and a pair of compasses only, construct an angle of 300^0.

10. Find the direction of **P** from **Q** in the figure below.



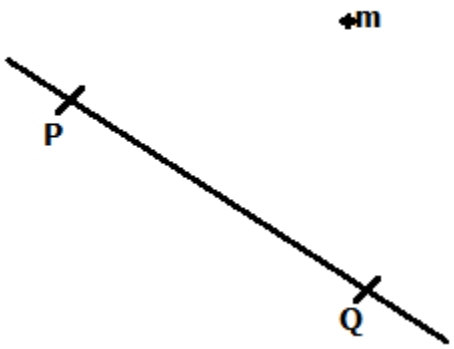
11. Find the value of **m** in the figure below.



12. Through what angle does the minute hand of a watch turn in 30 minutes?

SECTION B (13 marks)

13. Using a ruler, a pencil and a pair of compasses only drop a perpendicular line from point **m** to meet **PQ** at **R.** **(2marks)**



14. The interior angle of a regular polygon is 100^0 more than the exterior angle. How many sides does the polygon have?

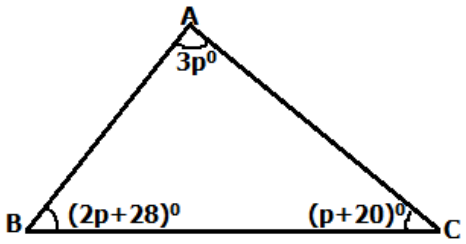
15. Using a ruler and a pair of compasses only, construct arhombus ABCD where diagnols AC = 10cm and BD = 8cm. Measure length AD. (4marks)

16. Using a ruler, a pencil and a pair of compasses only, construct a triangle **ABC** where line **AB = 6.4cm,** angle **CAB = 60^0** and angle **ABC = 75^0.** (3marks)

Measure the length **BC.** (1mark)

17. Draw a triangular pyramid (Tetrahedron) in the space below. (1 mark)

18. Use the figure below to answer questions that follow.



a) Find the value of **P**. (2marks)

b) What is the size of angle **ABC**? (2 marks)

19. Using a ruler, a pencil and a pair of compasses only. Construct a square of side 5cm below.

(3marks)

20. John took a clockwise turn from West, through an angle of 270^0. Where is he facing now?

(2 marks)

21. Using a ruler, a pencil and pair of compasses only. Construct a triangle **XYZ**, where

XY = 6cm, angle **x = 90^0** and angle **y = 30^0.** (3marks)

SET VIII
TOPIC: TIME
SECTION A (12 marks)

1. How many months of the year have 30 days?

2. Add;

	HRS	MINS
	3	4 5
+	2	5 0

3. Opolot spent a total of 5 hours 20 minutes at school. She played for 1 hour 30 minutes. For how long did she stay in class?

4. Express 2:30 p.m in 24-hr clock.

5. Express 36km/hr to m/second.

6. A 30 minute lesson ended at the time shown on a clock face below. When did it start?

SECTION B (13 marks)

7. Agnes left her home at 8:00am riding a bicycle and arrived at his place of work 36km away from her home at 9:15a.m. Find her average speed for the journey. (3marks)

8. How long will it take a bus to cover a distance of 120km at 40km/hr. (2 marks)

9. Moses took 40 minutes to drive from home to school at a speed of 90km/hr. How far is his home from school? (2 marks)

10. The table below shows arrival and departure time for a bus that travels from Kampala to Hoima daily.

Town	**Arrival time**	**Departure time**
Kampala		7:30 a.m
Busunju	8:10 a.m	8:30 a.m
Bukomero	9: 30 a.m	9:45 a.m
Kiboga	10:15 a.m	10:40 a.m
Hoima	11: 40 a.m	

a) At what time does the bus leave Kampala? (1 mark)

b) How long does the bus stay at Bukomero? (1 mark)

c) How long does the bus take to travel from Bukomero to Kiboga? (2 marks)

d) Find the total time taken by the bus to travel from Kampala to Hoima? (2 marks)

SET IX

TOPIC: MONEY

SECTION A (12marks)

1. How many 500 shillings coins are equivalent to a ten-thousand-shilling note?

2. At a forex bureau one US dollar costs Ug.sh. 3700. How many US dollars can one buy with Ug.sh. 1480000?

3. A television set costs £150. How much is this in Uganda shillings if £1 is equivalent to Ug.sh. 4800?

4. How much change do I get if I spend sh. 6500 from sh. 20000?

5. Paul gave 5 one thousand-shilling notes to a shopkeeper. How much money was this?

6. The bursar has banknotes numbered from AP004300 to AP004399 consecutively. If each note is worth ten thousand shillings, how much money does the bursar have?

SECTION B (13 marks)

7. Kibuuka went for shopping and bought the following items.

Complete the table below. (4 marks)

Item	**Quantity**	**Unit cost**	**Amount**
Rice	2 ½ kg	Sh. 3000	Shs_____
Meat	3kg	Sh. _____	Sh. 36000
Cooking oil	_____	Sh. 2500	Shs. 10000
Total Expenditure			**Sh._____**

8. Study and complete Bogere's shopping bill below.

Item	**Quantity**	**Unit cost**	**Amount**
Sugar	3kg	Sh……per kg	Sh. 14400
Rice	……kg	Sh. 5000 per kg	Sh. 2500
Milk	250ml	Sh. 3000 per litre	Sh…….
Biscuits	2 packets	Sh. ……. per packet	Sh…….
Total Expenditure			**Sh. 29650**

9. Kimuli bought a coat sh. 35000 and sold it at shs. 42000. How much was his profit?

(2 marks)

10. A pupil bought a ball at shs. 15000. He sold it and made a loss of shs. 3000. What was the selling price of the ball? (2 marks)

SET X

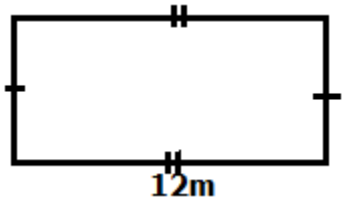
SECTION A

1. Add: 42 + 13

2. Write 40, 709 in words.

3. Expand 793 using values.

4. The area of the figure below is $60m^2$. Find the value of W.



5. A man bought a radio at sh. 70,000 and sold it at a loss of sh. 7,000. How much money did he sell it?

6. Tell the time on the clock face below.

7. Find the median of 4, 0, 6, 8, 12, 4 and 13.

8. Work out: $3\ 2\ 1_{five}$

$-\ 3\ 3_{five}$

9. Using a ruler, a pencil and a protractor only, draw an angle of 65_0.

10. Simplify: $1\frac{1}{2} \div \frac{3}{4}$

11. Find the Lowest Common Multiple (LCM) of 18 and 24.

12. Given R = { a, b, c}. List down all the subsets in set R.

13. Solve: $3y - 7 = 29$.

14. Find the value of the digit in the thousands place value in the number 325,723.

15. Find the next number in the sequence below.

    1, 3, 6, 10, 15, _____

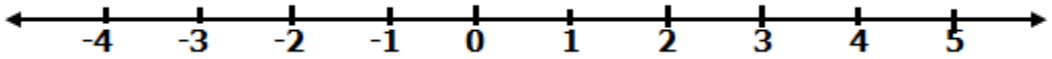
16. A dice is rolled once. Find the probability that a composite number shows on top.

17. Change 1600g to kilograms.

18. Find the square root of 64 using prime factorization.

19. Share 1818 books among 6 children.

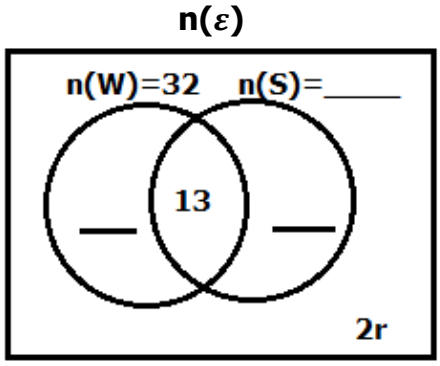
20. Work out $^{-}3 + {}^{+}7$ using the number line below.



SECTION B

21. At a party attended by 50 guests, 32 were served with water (W), 210 were served with Soda (s) only. 13 guests were served with both drinks while 2r did not take any of the two drinks.

a) Complete the Venn diagram below using the information above. (3marks)



b) Find the value of **r.** (2marks)

c) How many guests were served with soda altogether? (1mark)

22. In a class of 120 pupils, $\frac{3}{5}$ of them are girls while the rest are boys.

a) What fraction of the class is boys? (1mark)

b) How many more girls than boys are there in the class? (3marks)

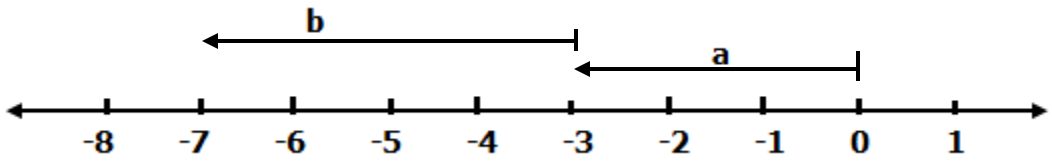
23. Given the digit 7, 3, 1 and 8.

a) Write the largest four-digit number formed using the digits above. (1mark)

b) Find the difference between the largest and smallest numbers formed using the digits above.

(3marks)

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



(a) Identify the integers represented by the arrows. (1 mark @)

a_____ **b** _____

b) Complete the number line above and drawing the third arrow. (1mark)

c) Write down the mathematical sentence shown on the number line above. (2marks)

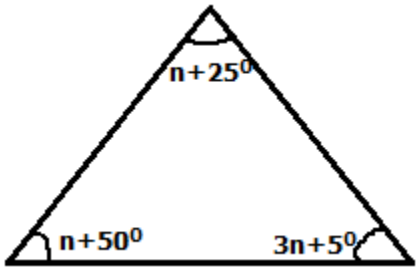
25a) Given **p = 3**, **q = 4** and **r = 5**, find the value of $\frac{2p+q}{r}$. (2marks)

b) Solve: $\frac{3}{5}y = 6$ (2marks)

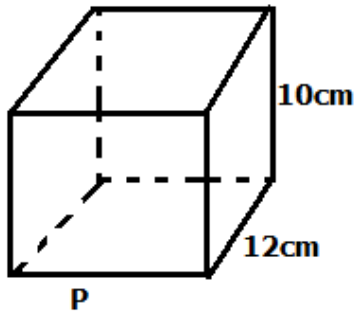
c) Simplify: 4p – 3m – p + 5m. (2marks)

26a) **d** and **d + 20^0** are supplementary angles. Find the value of **d.** (2marks)

b) Calculate the size of angle **n** in the figure below. (3marks)



27. Below is a rectangular prism that holds 3.6 litres of water when full. Study it carefully



a) Find the value of **p.** (3marks)

b) Work out the area of the shaded part. (2marks)

28a) Work out: (2marks)

Hrs	**Min**
8	4 2
- 3	5 6

b) A motorist covered a distance of 280km from 8:00am to 11:30 am. At what speed was he moving? (3marks)

29. The table below shows the items Maria bought from the shop.

a) Complete the table. (5marks)

Item	**Quantity**	**Unit price**	**Amount**
Sugar	3 kg	Sh. 3200 per kg	Sh. _____
Milk	_____litres	Sh. 1800 per litre	Sh. 2700
Bread	2 loaves	Sh. _____ per loaf	Sh. 9000
Tea leaves	250gm	Sh. 800 per kg	Sh. _____
TOTAL			**Sh. _____**

b) If her change was sh. 3500, how much money did she have at first? (1 mark)

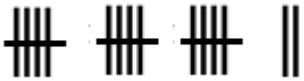
30. Using a ruler, a pencil and a pair of compasses only, construct a regular hexagon in a circle of radius 4cm. (4 marks)

31a) Work out: 8 + 3 x 2 (2marks)

b) Work out: 55 x 49 + 51 x 55. (2marks)

c) Round off 3562 to the nearest thousands. (1mark)

32. The tally graph below shows the number of patients that were diagnosed with different illness at a medical facility. Study it carefully and use it to answer the questions that follow.

Illness	**Tally**
Malaria	
Covid-19	
Cough	
Dysentry	

a) How many patients were diagnosed with malaria? (1 mark)

b) How many more patients were diagnosed with cough than covid-19? (2marks)

c)Find the average number of patients that went to the facility? (2marks)

THE END