

SECTION A

1. Add: $909 + 122$.

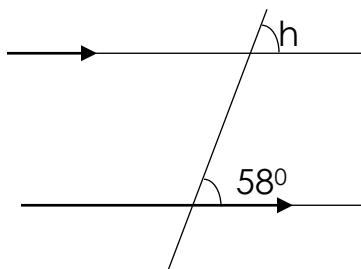
2. Write one thousand four hundred sixty in roman numerals

3. Work out: $x^6 \times x^2$.

4. Simplify: $4x - 3q + 6x + 5q$

5. Solve: $2x + 40 = 100$

6. Find the size of angle h.



7. Change 108 ten to binary base.

8. What is the complement of $60 - x$.

9. Using a ruler and a pair of compasses, construct angles of 75° .

10. Find the next number in the sequence.

1, 4, 9, 16, _____.

11. Change 12:30a.m to 24hr clock system.

12. Pepito's speed is 25m/s. change this to km/hr.

13. Show -3×2 on a number line.

14. Add:

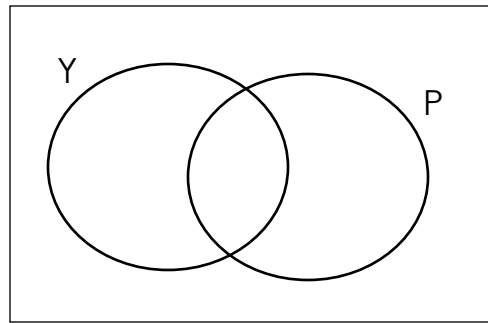
$$\begin{array}{r} 1101_{\text{two}} \\ + 1011_{\text{two}} \\ \hline \end{array}$$

two

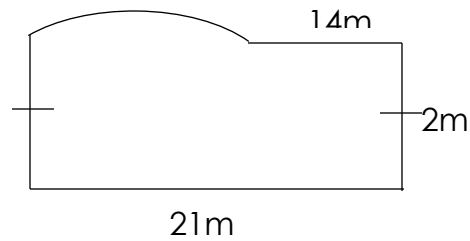
15. Given that: $z = -3$, $y = 2$ and $x = -2$. Find the value of;

$$\frac{zx}{y}$$

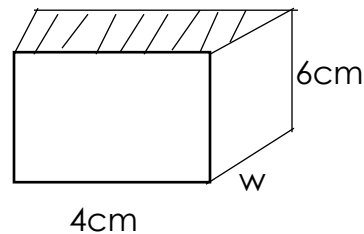
16. Shade region (P).



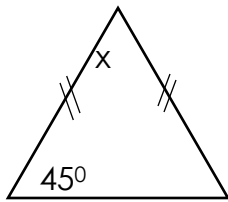
17. Find the perimeter of the figure below.



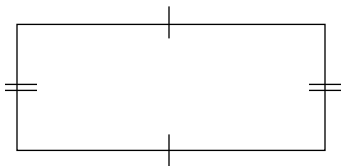
18. Find the volume of the above shape. If the area of the shaded part is 48cm^2 .



19. Find the value of x .



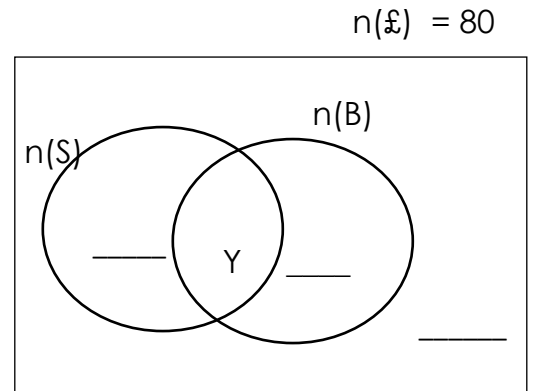
20. Draw the lines of folding symmetry.



SECTION B

21. At a party of 80 guests, 60 drunk Soda (S), 30 drunk Beer (B), Y drunk both while 3 drunk other beverages.

(a) Show the above information on the Venn diagram. (3 marks)



(b) Find the value of Y and the guests who drunk beer only.

(2 marks)

22. Patricia went to the market and bought the following items.

2kg of rice at 2,000/= per kg.

$1\frac{1}{3}$ litres of oil at 6,000/= per litre

250g of sugar at 4,000/= per kg.

2 dozens of pencils at 2,000/=

(a) Find his total expenditure.

(4 marks)

(b) If his change was 15,000/=, find the amount he went with.

(2 marks)

23. Simplify;

(a) $\frac{0.8-0.4}{0.2}$

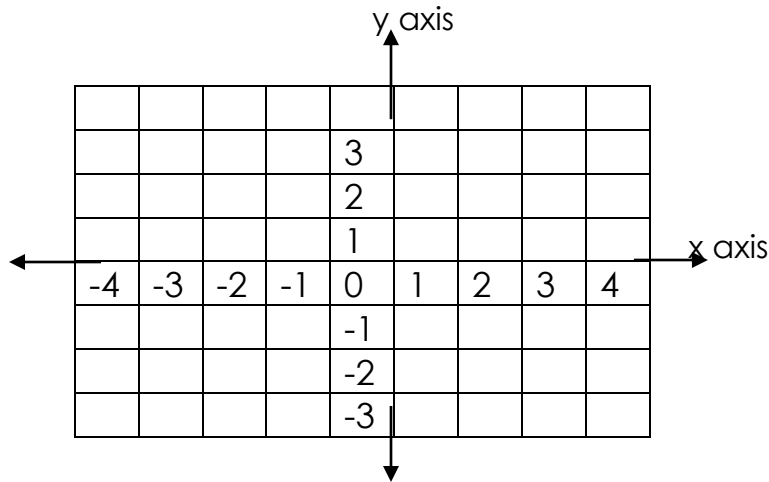
(b) $\frac{1}{2}x + 4 = 10$ (3 marks each)

24. Using a pair of compasses, a ruler and a pencil, construct a rhombus given diagonal PR = 6cm, diagonal QS = 4cm.

(3 marks)

25. On the graph below, plot points; A $(-2, 2)$, B $(-2, -2)$,

C $(+2, -2)$, D $(4, 2)$ (4 marks)



(b) Join A to B, B to C, C to D and D to A (1 mark)

(c) Find its area using cm as the units. (2 Marks)

(b) Find the amount she paid back altogether. (2 marks)

27. The following are marks scored by pupils in a test; 90, 60, 80, 90, 70, 98, 60, 90, 40.

(a) How many pupils did the test? (1 mark)

(b) Find the median mark.

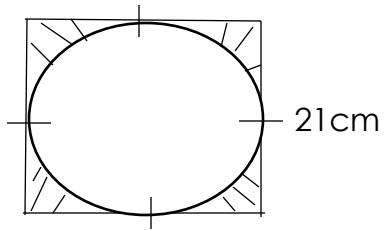
(2 marks)

26. Patience borrowed 600,000/= at an interest of 10% per year for 5 months. Find her interest. (2 marks)

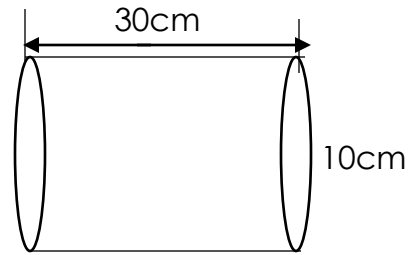
(c) Find the modal frequency.

(2 marks)

28. Work out the area of the shaded part. (4 marks)



30. The diagram below shows a cylindrical tin opened at one end. Find its total surface area taking pi as $\frac{22}{7}$. (3 marks)

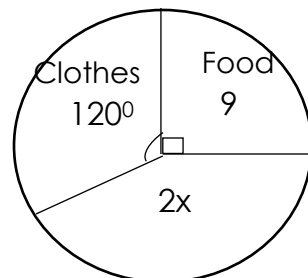


29. The exterior angle of a regular polygon is $\frac{1}{4}$ of its interior angle.

(a) Find the exterior angle.

(3 marks)

31. The pie chart below shows how Precious spends her monthly salary.



(b) Find its interior angle sum.

(2 marks)

(a) Find the value of x. (3 marks)

(b) If she spends 600,000/= on clothes, find her salary. (3 marks)

32. The bearing of town B from A is 120° and town B is 6km. The bearing of town C from B is 160° and C is 8km away from C.

(a) Draw a sketch showing the three places. (1 mark)

(b) Draw one accurate diagram. (3 marks)

(c) Find the shortest distance from A to C. (2 marks)

PAPER II
SECTION A

1. Subtract; $1120 - 136$.

2. Write 675 in roman numerals.

3. Given that $G = \{\text{dog, cat, mouse}\}$. How many subsets are in set G ?

4. Solve for x : $2x + 5 = 13$

5. Kontunu's speed is 120m/s.
express it in km/hr.

6. Find the next number in the sequence.

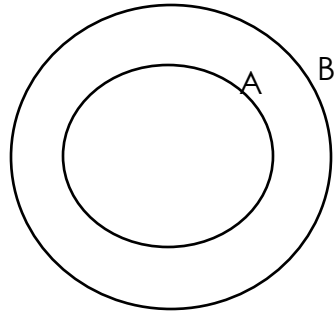
1, 8, 27, 64, 125, _____, _____.

7. Using a ruler and a pair of compasses only, construct an angle of 135° .

8. The following numbers; 1, 2, 3, 4, 5, 6, 7, 8, 9 were written on small pieces of papers. The pieces of papers were similar in all respects of area of weight. The pieces of paper were then folded well and placed in a basket. If a piece of paper was then fairly picked at random from the plastic basket; find the probability that the piece of paper picked has on a prime number?

9. If $z = -3$, $y = 2$ and $x = 6$, find the value of $\frac{zy}{x}$.

10. Shade the intersection.



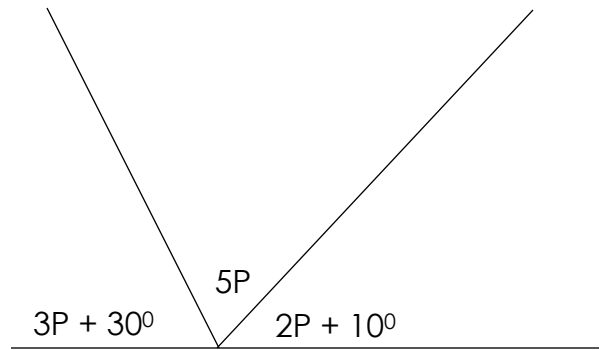
11. Express 40 as a percentage of 160.

12. If today is Wednesday, how many days was it 96 days ago?

13. Change 124_{six} to binary base.

14. Find the square root of $\sqrt{\frac{13}{36}}$

17. Workout the value of P.

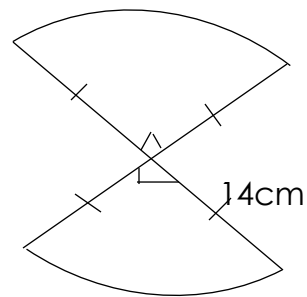


15. An SST lesson started at 10:10am. If it lasted 7200sec. at what time did it end.

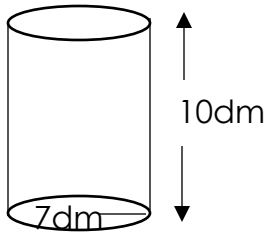
18. Workout using only distributive property: $(3 \times 40) + (3 \times 60)$

16. I think of a number, add 7 to it and double the result the answer is 40. Find the number.

19. Workout the perimeter.



20. A cylinder can shown in the figure below is 10dm in height. Find its volume if its radius is 7dm.



(b) How many pupils like;

(i) Music and History.

(ii) Music only?

SECTION B

21. In a class of 100 pupils, 80 like Music (M), 80 like History (H), 5 like neither.

(a) Represent the above information on a Venn diagram.

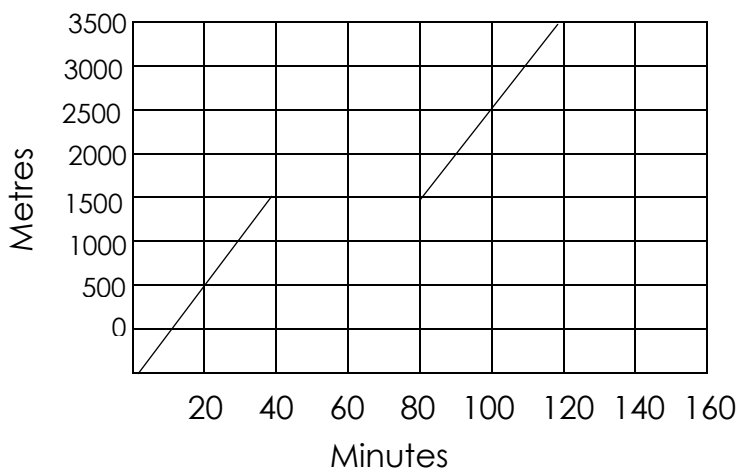
(c) Find the probability of a teacher picking a child as a class prefect who enjoys History only.

22. Mugabo borrowed shs. 450,000 from the bank and promised to pay at an interest rate of 8% per annum for 2 years. Calculate the amount he paid back.

(a) How long did he rest.

(b) Find his average speed while traveling.

23. The graph below shows the distance covered by a bicycle on a Monday morning by Kapere, a pupil, riding from his home to school.



(c) Find his average speed for the whole journey.

24. Mukene went to the shop and bought the following items.

3 packets of biscuits at 1,500 per packet.

1.5kg of meat at 10,000/= per kg.

450ml of cooking oil per litre sh. 1,000.

$\frac{1}{2}$ kg of sugar at shs. 5,000.

If he was given 20,000/= notes, find his balance.

26. Construct a hexagon with sides 4cm and the interior angle is 108.

25. Workout the following;

(i) $\frac{0.72 \times 0.27}{0.06 \times 0.3}$

27. In a class, Teddy scored 40%, Tom scored 20%, Tendo scored 30% and Paul scored 10%. Represent it on a pie chart. With the radius 3.8cm.

(ii) $64 \div 4 - 8 \times 2$

28. Given that $y = x - 1$, copy and complete the table below, then plot the points on a grid and join them.

x	-3	-2	-1	0				
y					1	2	3	4

Find the maximum rainfall in 6 months

Calculate the range

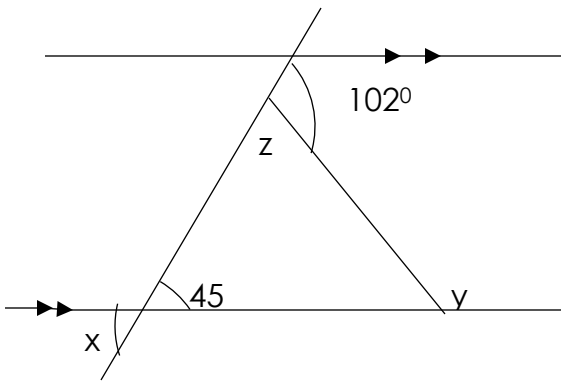
29. The rainfall pattern for 6 months was recorded as follows;

Months	Ja	Feb	Mar	Ap	May	Ju
Rainfall (mm)	1.2	1.6	3.8	4.3	5.8	3.4

Find the minimum rainfall in six months.

30. By selling a cloth at 180,000/=. A boy realized a loss of 20%. The cost for the same computer

31.



Find the value of;

(i) x

(ii) y

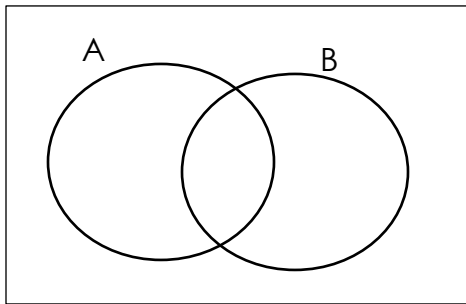
(iii) z

32. Town x is 40km east of Y and town K is 60km South of Y . Given that $10\text{km} \rightarrow 1\text{cm}$, draw an accurate diagram showing the three towns.

PAPER III
SECTION A (40 MARKS)

1. Add: 242
 + 86

2. Shade the region which represents $(A \cap B)'$



3. Change 8,640 to Roman numerals.

4. Add: 15_{six} to 542_{six}

5. Subtract $8a + 6d$ from $14d - 3a$.

6. Simplify: $2\frac{2}{20} - \frac{4}{5} + \frac{2}{3}$

7. Find the square root of 196.

8. Oloya deposited sh. 72,000 in Stanbic Bank which offers an interest rate of $2\frac{2}{3}\%$ p.a. Calculate the simple interest he will be given after 8 years.

9. Decrease sh. 10,800 in ratio 3:5

12. Workout: $2^y \div 2^3 = 2^{10}$.

10. Write the solution of b in
 $14 > 2b > 8$.

13. Two bells ring at intervals of 40min to 30min. If they first rang at 10:30am, what time will they ring again?

11. Find the complement of
 $(2y + 15)^\circ$

14. Change 0.333... to a common fraction in its lowest terms.

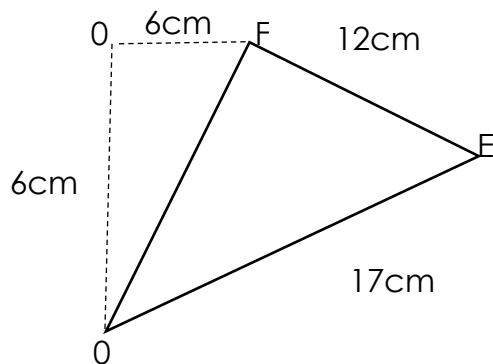
15. Round of 19.987 to the nearest tenths.

17. Using a ruler, a pencil and a pair of compasses, draw a perpendicular from point A to meet line BC below.

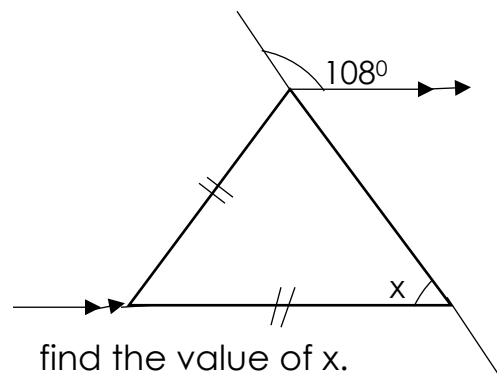
● A



16. Workout the area of triangle DEF.

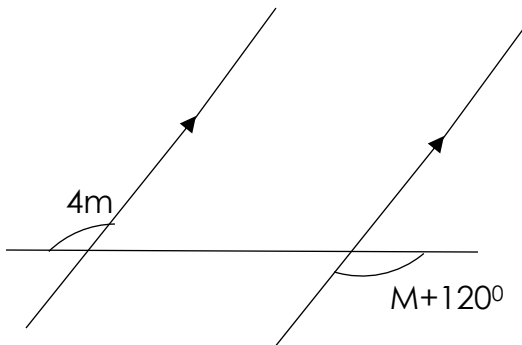


18.



19. In a class of 40 pupils, 30 are girls. Express the number of boys as a percentage of the class.

20. Find the value of m in degrees.



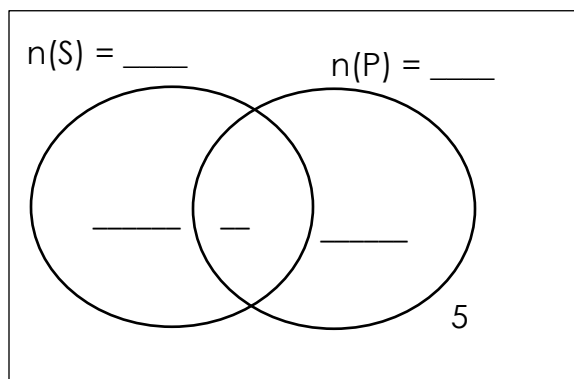
(b) Find the value of n (2 marks)

(c) How many pupils drink Sprite? (1 mark)

SECTION B (60 MARKS)

21. In a class, 24 pupils drink Pepsi (P), $(n + 2)$ drink both Pepsi and Sprite (S), $2n + 1$ drink Pepsi only, 21 drink Sprite only while 5 drink neither of the two.

(a) Complete the venn diagram below. (2 marks)



22. If today is Wednesday, which day of the week;

(a) Will it be 64 days from today. (2 marks)

(b) Was it 32 days ago? (2 marks)

23(a) If $x = 3$ and $z = -2$, find the value of $\frac{-3+3x}{z}$ (2 marks)

(b) If she returned at a steady speed of 90kph, how long did she drive? (2 marks)

(b) Solve: $3(a - 4) - 12(a + 2) = 54$ (3 marks)

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

24. Betty drove from Kampala to Jinja at a speed of 60kph for 3 hrs.

(a) How far is Kampala from Jinja? (2 marks)

25. The interior angle of a regular polygon is 600 more than its exterior angle.

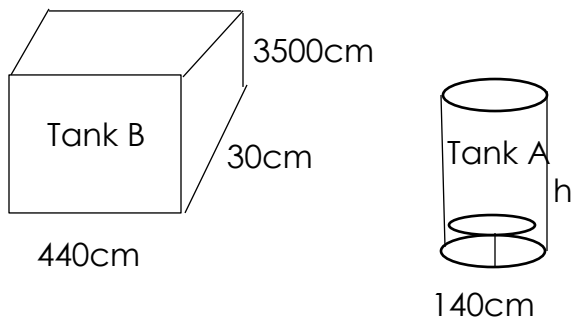
(a) Find its number of sides. (3 marks)

(b) Find the interior angle sum.
(2 marks)

(b) Draw its accurate diagram.
(5 marks)

26. If two tanks had the same amount of water when filled. It means they have the same volume.

(a) Find the height of tank A to King Pias $3\frac{1}{7}$ (3 marks)



(c) Find the shortest distance from P to B. (2 marks)

27. Town A is 4km away from town B on a bearing of 240° and town A is 6.5km west of town P. Using a scale of 1cm to represent 1km;

(a) Draw a sketch showing the 3 towns. (1 mark)

28. The average of $3x$, 7 and 8 is 8.

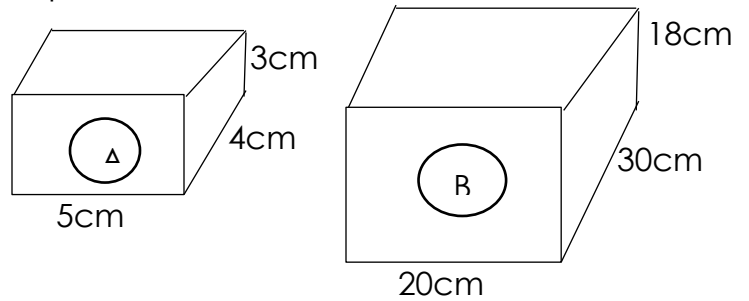
(a) Find the value of x . (2 marks)

(b) $2x - 4 \leq 24$ (2 marks)

(b) Find the range. (1 mark)

(c) Find the median (2 marks)

30. Small boxes of type A were packed in carton B



(a) How many boxes are in the carton? (2 marks)

29. Solve;

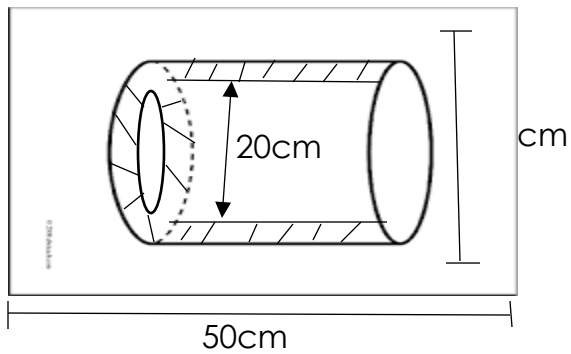
(a) $22(x - 2) - 3(x + 3) = -22$
(3 marks)

(b) Find the volume of the carton. (2 marks)

(c) Find the volume of the small boxes. (2 marks)

(c) Calculate the volume of thickness (1 mark)

31 Below is a metallic pipe.



Taking π as 3.14

(a) Calculate the volume of the inner cylinder. (2 marks)

32. Construct an angle of;
(a) 135° (2 marks)

(b) Work out the volume of the outer cylinder. (2 marks)

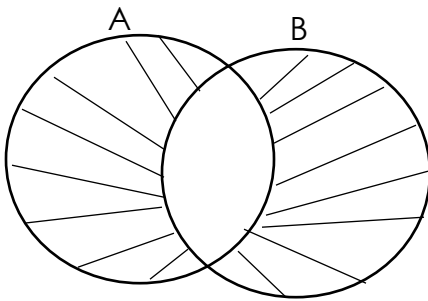
(b) 75° (2 marks)

PAPER IV

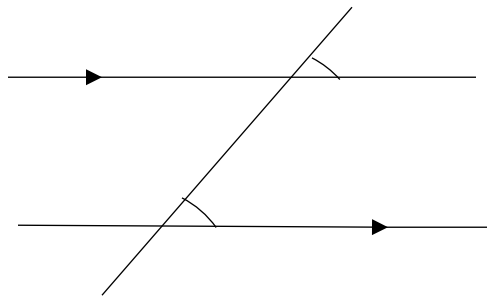
SECTION A

1. Add: $64 + 36$

2. Name the shaded region below.



3. Find the value of x in;



4. If $n = 5$ and $p = -7$. Find $\frac{n+p}{2}$

5. Write 56.29 in standard form.

6. Construct an angle of 120° and bisect it.

7. Workout $5 + 2 = \underline{\hspace{1cm}} \pmod{7}$

8. Find the missing numbers in the sequence below;

1, 4, 9, 16, 25, 36, 49, .

9. Simplify $3e + 5c - 2e + 8c$

13. Solve: $2x - 2 = 8$

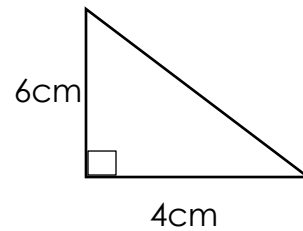
10. Express DCCCVIII in Hindi Arabic.

14. Find the missing base in

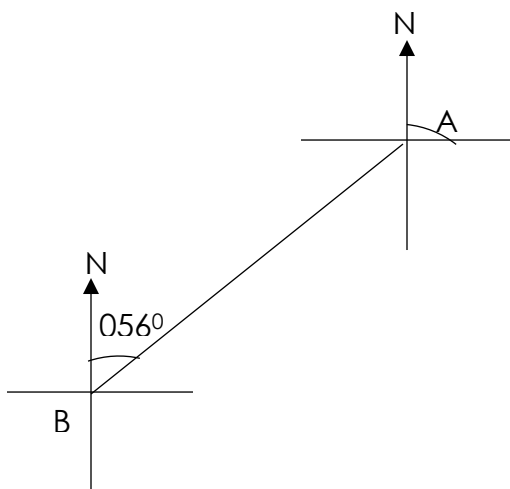
$$23_x = 13_{\text{ten}}$$

11. How many lines of folding symmetry does a kite have?

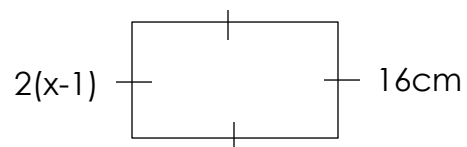
15. Find the area of;



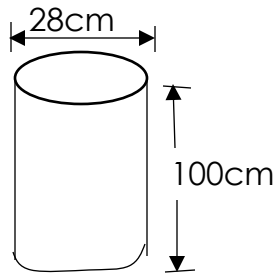
12. What is the direction of A from B?



16. Find the value of x .



17. Find the volume of the cylinder.



18. The LCM of two numbers is 48 and their G.C.F is 4. If one of the numbers is 16, find the second number.

19. Express 49 in Roman numerals.

20. Express $\frac{1}{4}$ as a decimal.

SECTION B

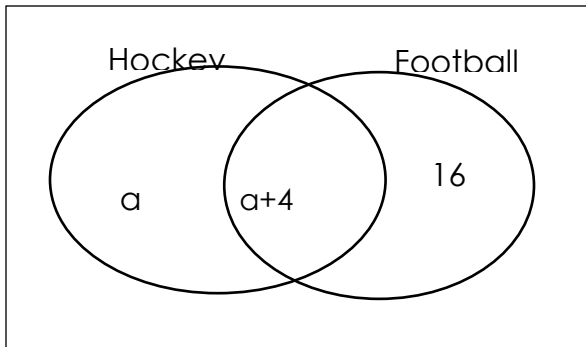
21. With the help of a sharp pencil, ruler and pair of compasses, construct a triangle PQR where angle PQR = 45° , angle QPR = 60° and line PQ = 5cm. Drop a perpendicular line from point R to meet line PQ at point O.

Measure;

(i) Line RO

(ii) Angle PRO

22. On the diagram below, 24 pupils play Hockey (H)



(a) Find the value of a

(b) How many pupils play one game?

3 basins at sh. 4,500 each.

(a) How much did he spend on all the items?

(b) If he went with three fifty thousand notes, calculate change after shopping.

23. Peter went to capital shoppers supermarket and bought the following:

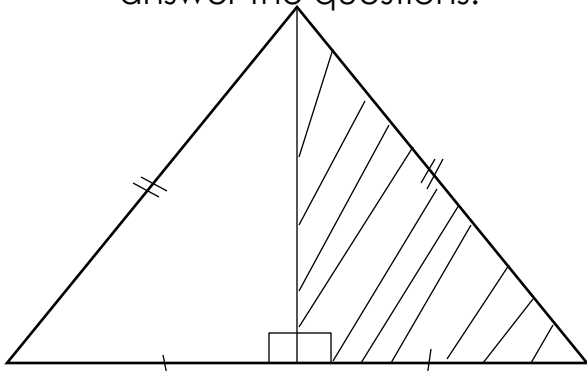
2 tubes of tooth paste at sh. 8,000.

A pair of shoes at sh. 100,000.

5 plastic soda bottles at sh. 2,000 each.

(c) Assuming he was given a discount of 10% after shopping, calculate the actual amount of money he would pay.

24. Study the diagram below and answer the questions.



(a) Find the value of y

(b) Calculate the area.

(c) A dog moved round the entire triangle three times, what distance did it cover?

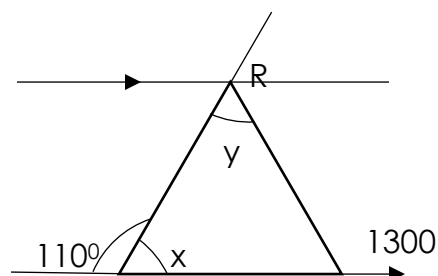
25(a) Solve: $\frac{(x-2)}{2} = \left(\frac{x+3}{3}\right)$

(b) Frank is twelve years older than Mark. In 8 years' time, their total age will be 48 years.

(i) How old is Frank now?

(ii) How old will Mark be in fifteen years.

26. Study the diagram below and answer the questions.



Find the value of;

(i) x

(b) How many customers in total entered Naku's restaurant.

(ii) y

28(a) 10 men can finish a piece of work in 2 days. How many days will 4 men take to finish the same piece of work?

(iii) z

27. In a group of customers that entered Naku's restaurant, $\frac{3}{8}$ ordered for rice, $\frac{1}{5}$ of the remainder ordered for matooke while twenty ordered for posho.

(a) What fraction of the customers ordered for;

(i) Matooke

(b) How many more days will the 4 men take to finish the same work?

28(a) There are 60 pupils in P. 7 Bright. $\frac{2}{3}$ of them are girls. How many boys are in the class?

(a) Identify the integers

a _____

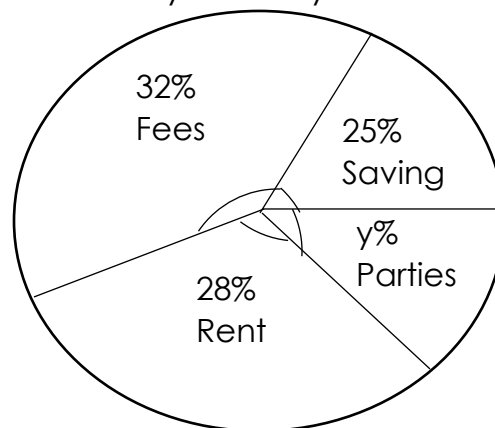
b _____

c _____

(b) Write a mathematical statement.

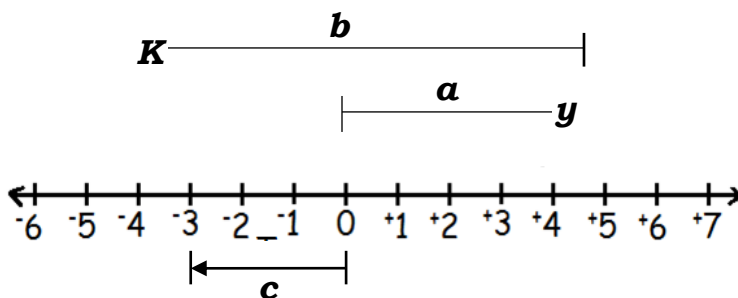
(b) How many more girls are in the class?

31. The pie chart below shows how Mr. Lubanga spent his money monthly.



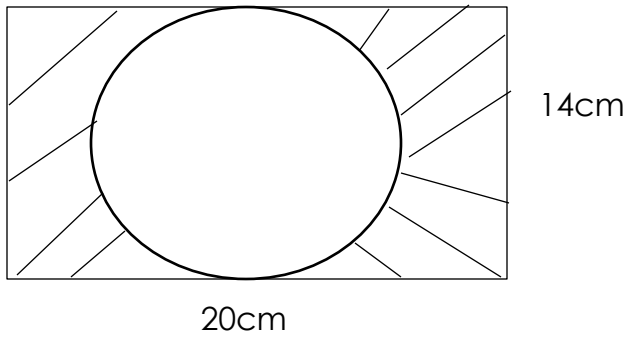
(a) Express the sector of parties in degrees.

30. Study the number line below carefully.



(b) If he spent 560,000/= on rent, workout his total income.

32. The figure below is a rectangle with a circle in it. Find the area of shaded part.



PAPER V
SECTION A

1. Add: $3 + 3$

2. Arrange in ascending order;

0.7070, 0.0707, 7.700, 7.010

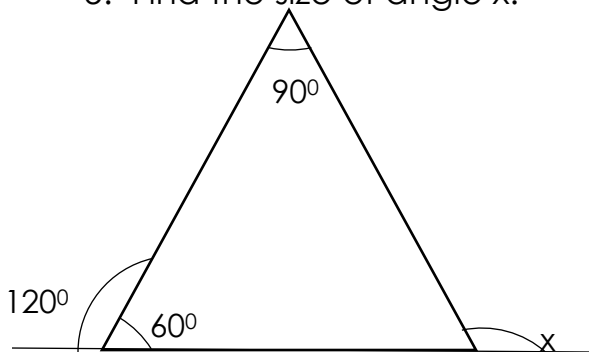
3. Simplify;

$0.025 \times 100 + 10 \times 2.5$

4. Find the next number in the sequence;

1, 3, 7, 13, 21, _____

5. Find the size of angle x.

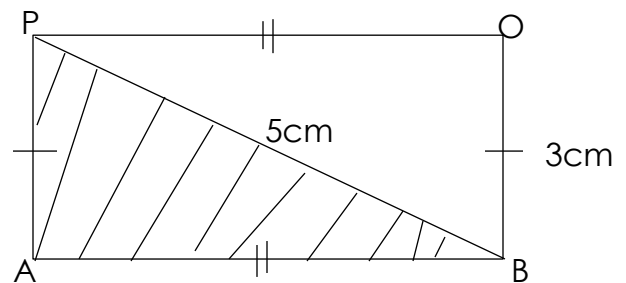


6. The circumference of a tractor tyre is 484cm. Find radius.

7. If $m = 3$ and $y = -2$. Workout;

$$\frac{2(ym)+2}{(n-y)-6}$$

8. Calculate the area of the shaded part.



9. Using a pair of compasses, construct 75° .

12. Solve;

$$\frac{20}{n} + 4 = 44$$

13. Simplify;

$$3p - 3q + 2p + 2q$$

10. Write 198 in Roman numerals.

11. Solve the equation.

$$2(x - 3) + 3(3x - 1) = 13$$

14. Workout;

$$\begin{array}{r} 111_{\text{two}} \\ + 11_{\text{two}} \\ \hline \text{two} \end{array}$$

15. What is 10% of 30 eggs?

16. Express the ratio of 2:9 as a percentage.

19. Add: $\frac{7}{20} + \frac{3}{4}$

17. Workout: $4\frac{1}{4} - 2\frac{1}{2}$

20. Subtract; $1\frac{1}{3} - \frac{3}{4}$

18. Kalya bought $6\frac{1}{2}$ kg of sugar. If she gave her mother $4\frac{3}{4}$ kg, how many kg did she remain with?

SECTION B

21. All the 60 pupils in a class like Science, 35 like Math, 40 like English, y liked all the three while 2 like Science only.

(a) Represent on a Venn diagram.

(b) Find the value of y .

23. Max spends her pocket money as follows; $\frac{1}{3}$ on buying sweets, $\frac{1}{4}$ of the remainder on buying juice and the rest for transport. If she spends 5,000/= on juice;

(a) How much is her pocket money?

22. In a class of 40 pupils, 24 are girls and the rest are boys.

(a) Find the ratio of girls to boys.

(b) How much does she use on transport?

(b) What is the ratio of boys to girls?

24. Two taps; A and B are joined to a tank. Tap A takes 3 minutes to fill the tank when turned on alone and tap B takes 6 minutes to fill the tank when turned on alone. What fraction of the tank will be filled by?

(a) Tap A in one minute.

(b) Tap B in one minute.

(c) How long will the two taps take to fill the tank?

26. 10 men can build a wall in 6 days.

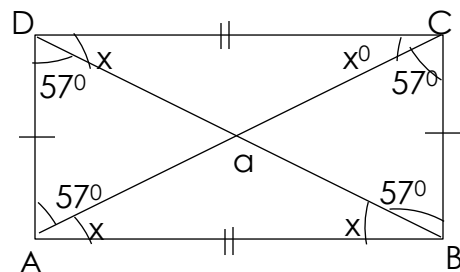
(a) How many days will two men take to do the same work?

(b) How many more men are needed to do the same piece of work in 3 days?

25. Mark travelled from Kampala to Namutumba at a speed of 80kph for $2\frac{1}{2}$ hrs. After 15 minutes rest, he returned to Kampala in $2\frac{1}{4}$ hrs.

Find the average speed for the whole journey.

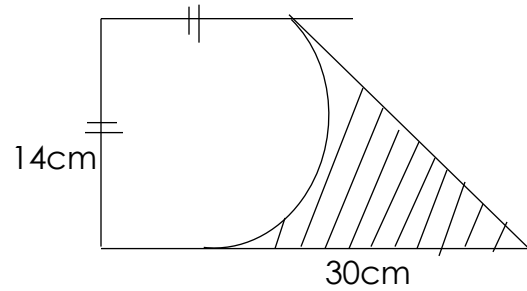
27. The figure below is a rectangle ABCD. The diagonals DB and AC intersect at O and angle DAC = 57° , angle DCO = x° .



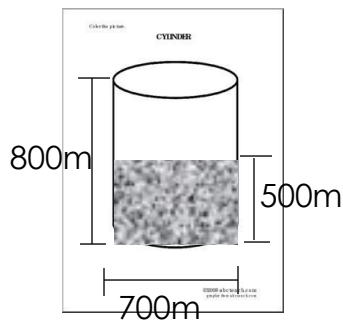
(a) Find the value of x .

(b) Find the size of AOB.

29. Find the area of the shaded part.



28. The cylindrical tin below holds water up to the level of 50cm.



(a) How many litres of water are in the tin?

30. Agness is 20 years younger than Claire. In 15 years, their total age will be 60 years. How old is each of them?

(b) How many litres of water should be added in the water to make it full?

31. In a school of 400 pupils, 60% of them are girls, $\frac{2}{5}$ of the girls are in lower primary and 30% of the boys are in upper primary. How many pupils are in upper primary?

32. Given that $y = x + 1$, complete the table.

x	-2		0		2
y		0		2	

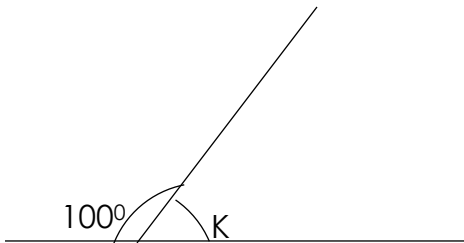
PAPER VI

SECTION A

Workout; 3

$$\begin{array}{r} x \ 0 \\ \hline \end{array}$$

2. In the diagram below find the value of K.



3. Convert 14_{five} to base ten.

5. Express 2:3 as a proper fraction.

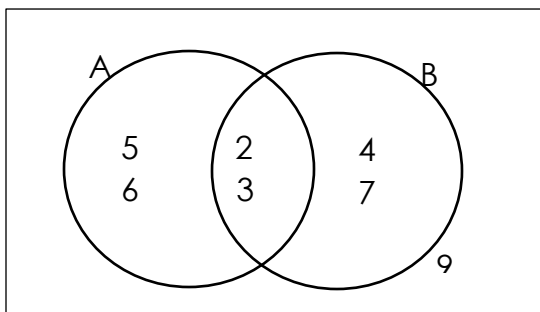
6. Simplify; $-4 - -7$.

7. Find the next number in the sequence.

3, 7, 11, 15, _____.

8. Convert 7km to metres.

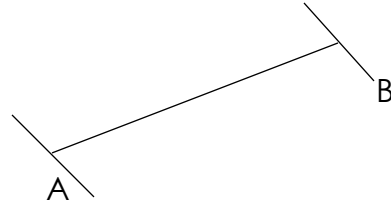
4. Find $n(A \cup B)$ using the Venn diagram below.



9. Given that $a = 4$, $b = 6$ and $c = 5$, find the value of $\frac{a+b}{c}$

10. Each of the twins had forty five books. How many books did they have altogether?

13. With the help of a ruler, pair of compasses and a pencil, construct a perpendicular bisector of line AB below.



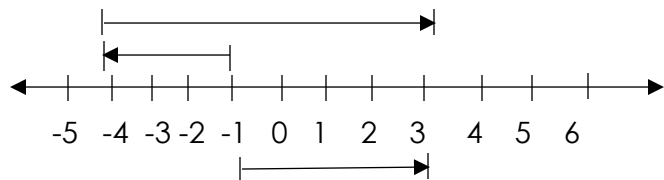
11. Express 1840 hours to 12 hours clock system.

12. Kato is twice the age of Nambi. If the difference in their age is 10, how old is Kato?

14. A housewife bought 6kg 200gm of sugar on Monday and 4kg 600gm on Tuesday. How much sugar did she buy altogether on the two days?

15. The addition mathematical statement below is

$$-3 + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$



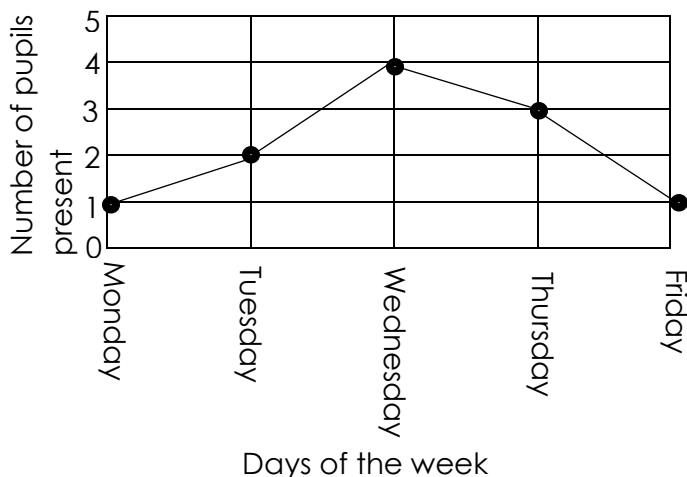
16. $A = \{0, 2, 4\}$ and

$B = \{0, 1, 2, 3, 4, 5, 6\}$

Find $A - B$

19. Simplify; $\frac{2}{3} - \frac{1}{6} \times \frac{1}{6}$

20. The graph below shows the number of pupils who were absent from school in a week.



17. Given the figure 793 complete the table below

Digit	Place value	Value
9	<u> </u>	<u> </u>

Find the total number of pupils absent the whole week.

SECTION B (60 Marks)

21(a) Workout 704×7

18. Lunyolo withdrew 27,000/=. If she was given denomination of 1,000/= only, how many notes was she given?

(b) In a football league, a team played 38 matches. It lost 7 matches, drew 10 matches and won the rest. Given that 3 points are awarded for a match won, 1 point for a match drawn and no point for a match lost. How many points did the team get in the 38 matches?

(c) Find $n(A - B)$

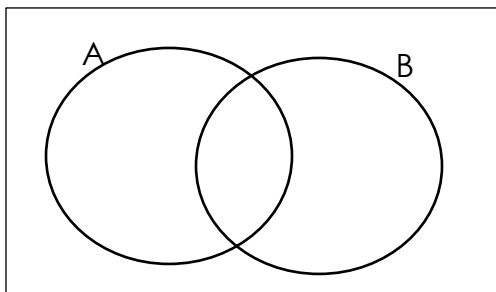
23. In a clinic, 7 children had the following masses; 2kg, 19kg, 8kg, 5kg, 9kg, 8kg, 12kg. Find the;

(i) Modal mass

(ii) Median mass

22. Given that $n(A) = 12$, $n(B) = 20$, $n(A \cup B) = 25$ and $n(A \cap B) = x$;

(a) Represent the information on a Venn diagram.



(b) Find the value of x .

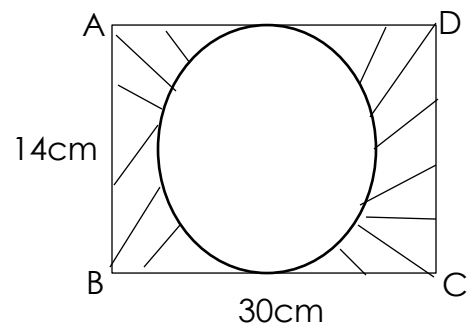
(iii) Mean mass

(b) How many children had their masses below the mean mass?

(b) How many sweets did Jane get than Suzan?

24(a) The sum of the three consecutive even numbers is 24. Find the actual numbers if the smallest is x .

26.



(a) Find the area of the rectangle ABCD.

(b) Find their range.

25(a) Three girls Jane, Suzan and Mary shared sweets in the ratio of 2:5:3 respectively. If Mary got 12 sweets, how many sweets did they share altogether?

(b) Taking π as $\frac{22}{7}$, find the area of the unshaded portion.

27(a) Solve $3(a + 2) + (2a - 1) = 29$

(b) Using the scale of 1 cm to represent 10km, draw an accurate diagram showing the above places.

(b) Find the solution set for;

$$2y + 3 < 9$$

(c) From the accurate diagram, find the true bearing of place A from place B.

28(a) Kabuye left place A from place B 60km apart on a bearing of 110° . He then headed to place C 55km away on a bearing of 070° . Draw a sketch showing the above places.

29(a) A bus moved at a speed of 80km/hr for 2 hours from Kampala to Masaka. It then moved at a speed of 60km/hr for 3 hours from Masaka to Mbarara. Find the distance between Kampala and Masaka.

(b) Find its average speed for the whole journey.



30. Benita had a 10,000/= shilling note. She went to the market and bought the following items;

6 mangoes at 500/= for 3 mangoes

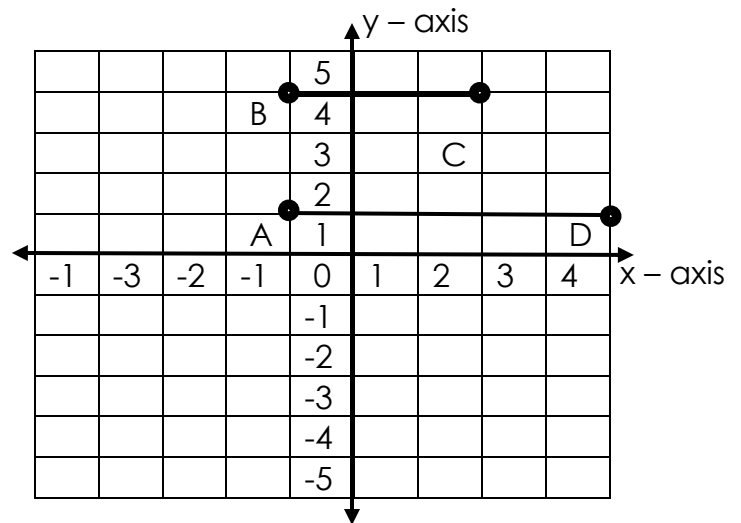
1 sugarcane at 500/=

2 loaves of bread at 3,300/= each

3 cakes at 300/= each

Find the change she received.

31. Study the graph below and answer the questions that follow.



(a) Name the co-ordinates of point

(i) A

(ii) B

(iii) C

(b) Join A to B, B to C, C to D and D to A. Name the figure formed.

(c) Find the area of the figure formed.

32(a) Work out; $\frac{0.12 \times 0.8}{0.4}$

(b) $\frac{2}{3}$ of a number is 20. Find $\frac{2}{5}$ of the same number.

PAPER 7

SECTION A

1. Subtract: 89

$$\begin{array}{r} 89 \\ - 50 \\ \hline \end{array}$$

2. Given that $a = \{a, b, c, d, e, f\}$.
Find $n(a)$

3. Find the numbers in the sequence.

1, 8, 27, 64, _____.

4. Solve: $\frac{2x}{4} = 6$

5. Workout: $-10 - 2$

6. Find the least number when divided by 5, 6 and 12 leaves two as a remainder.

7. Find the circumference of a circle whose diameter is 7hm.

$$\left(\pi = 3\frac{1}{7}\right)$$

8. Anita bought 5 pens at 5,000/=. How much could she pay for 20 pens?

9. Express 0.3636..... as a common fraction.

10. Find the sum of the place of 4 and the value of 6 in 45260.

13. Solve; $4x + 5 = 25$.

11. Construct 150° .

14. Find the mean of y ; $3y + 3$ and 5.

12. By selling a ball at 5,000/=, Musa got a loss of 2,000/=. Find percentage loss.

15. Express; 0.0028 in standard form.

16. Express 1111_{two} into decimal system.

17. A 50 minute lesson ended at 4:30pm. At what time did it start?

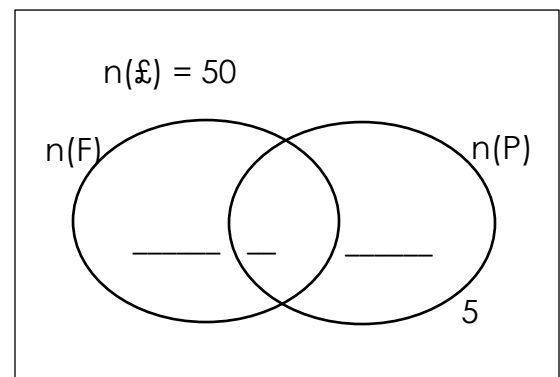
20. Workout: $\frac{1}{2} + \frac{2}{4} \div \frac{6}{8}$

18. A man sang a song in 15 minutes. How long will it take for 20 men to sing the same song?

SECTION B

21. In a group of 50 pupils, 30 pupils like Fifa and 20 pupils like Pess. If m people like both and 5 pupils like one.

(a) Draw a vann diagram and represent the information.



19. Calculate the length of each side of the rhombus whose diagonals are 16cm and 12cm.

(b) Find the value of m .

(c) Find the number of pupils who like only one subject.

23(a) If $a = 5$, $b = 10$, $c = 3$. Find:
 $\frac{a+b}{c}$

22(a) Solve: $\frac{0.6 \times 0.4}{0.8 \times 0.32}$

(b) Calculate the simple interest in 480,000/= deposited in a bank at a rate of 25% p.a. for 6 months.

(b) Change 452 in Roman Numerals.

(c) Solve and find the solution set for $3 \leq 2y - 1 \leq 7$

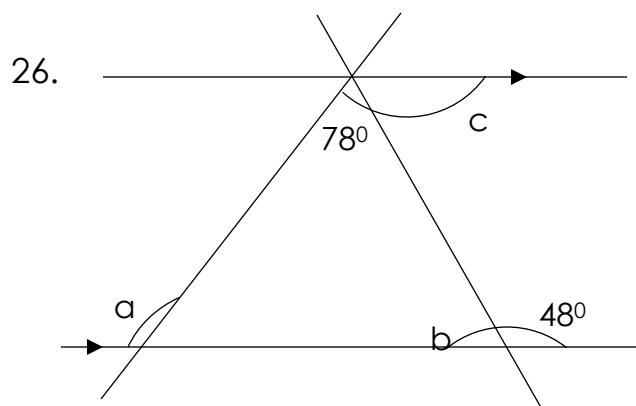
24. The interior angle of a regular polygon is 30° more than the exterior angle.

(a) Find the interior angle.

(b) Find the number of sides.

(c) Write a solution set for:
 $-4 < x \leq +4$

(c) Find the interior angel sum.



Find;
(i) a

25(a) Solve equations;

$$\frac{4x+1}{3} = \frac{x+4}{2}$$

(ii) b

(iii) c

(b) $5x - (2 + 2x) = 8$.

27(a) Find the supplement of
($x - 20^\circ$)

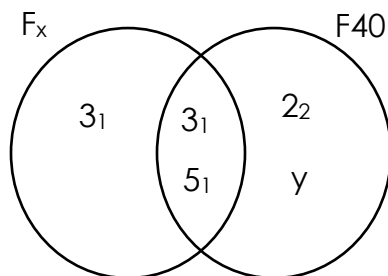
(a) Find the value of;
(i) x

(ii) y

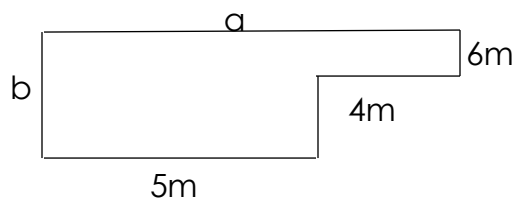
(b) Find the 50th triangular number.

(b) Find H.C.F.

28. The diagram below shows the prime factors of x and 40. Study it and answer questions.



29. Study the venn diagram below.



Find the value of;
(i) a

(ii) b

31. Teko went to smart shoppers supermarket and bought the following;

2½kg of sugar of shs. 3,000 per kg.

500g of salt at shs. 1,000 per kg.

2 cakes at shs. 500 each.

8 sweets at shs. 3,200/=.

Find the total bill.

30. John, Grace and Peter shared some money in the ratio of 2:3:5. If Peter got shs. 20,000;
(a) How much did they get altogether?

32. Using a pair of compasses, a ruler and a pencil, construct a triangle PQR, where PQ = 6cm, $\angle RPQ = 60^\circ$ and $\angle PQR = 45^\circ$.

(b) Find how much Grace got.

PAPER 8

SECTION A

1. Multiply;

$$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$$

2. Solve: $m - 3 = 8$

3. Write 49 in Roman numerals.

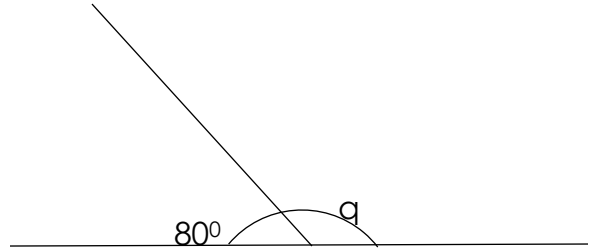
4. Write the number; 59,006 in words.

5. Subtract:

$$\begin{array}{r} 450 \\ - 145 \\ \hline \end{array}$$

6. If $a = 2$, $b = 3$ and $c = 5$, find the value of $3a + b + c$.

7. Find the value of angle q in the figure below.

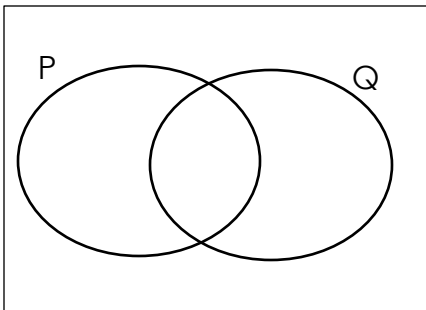


8. Find the next number in the following;
17, 12, 8, 5, 3, _____.

9. Find the complement of an angle of 50° .

10. A bus carries 60 passengers in a trip. How many passengers will it carry in 4 trips?

11. In the diagram below, shade $(P \cup Q)$.



12. Simplify; $\frac{7}{8} + \frac{3}{8} - \frac{1}{4}$

13. Write $7\frac{1}{2}\%$ as a simple reduced fraction.

14. Solve and find the solution set
 $a + 5 > 2$

15. A cyclist drove a distance of 6km in 20mins. Calculate his speed in km/hr.

16. Find the value of k if $3 - 5 = k \pmod{6}$

17. There are 30 eggs in one tray. How many trays will be required to pack 330 eggs?

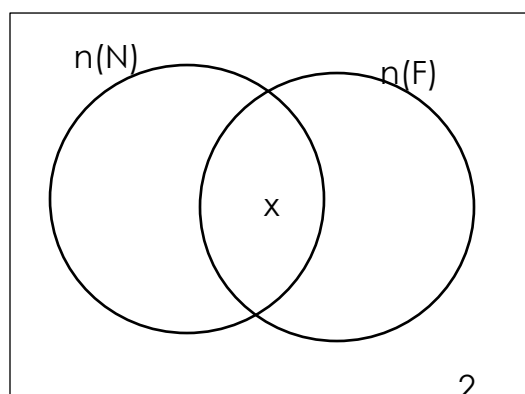
18. Workout: $111_{\text{two}} - 10_{\text{two}}$.

(b) $\frac{2m}{5} = 4$

19. Change 400m to metres.

22. In a class of 30 pupils, 20 play netball (n), 15 play football (f) and x play both games while 2 play neither of the two.

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



(b) Find the value of x.

20. Ten men take 12 days to dig a piece of land. How many men will dig in 8 days?

SECTION B

21(a) Simplify; $\frac{2.7 \times 4.8}{2.4 \times 3.6}$

(c) Find the number of pupils who play only one game.

24(a) What number has been expanded below;
 $(5 \times 10^2) + (4 \times 10^1) + (2 \times 10^{-2})$

23. The interior angle of a regular polygon is 100° more than its exterior angle.

(i) Find the value of its exterior angle.

(b) The LCM of two numbers is 120 and the GCF is 20. If one of the numbers is 40, find the other number.

(ii) How many sides does the polygon have?

25. A lady borrowed 900,000/= at an interest rate of 30% per annum for 9 months.

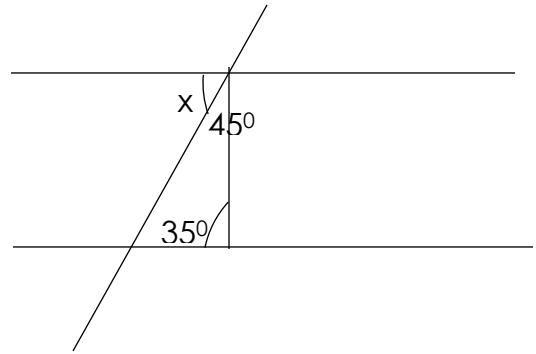
(i) How much interest did she get back?

(ii) How much money did she pay altogether after 9 months?

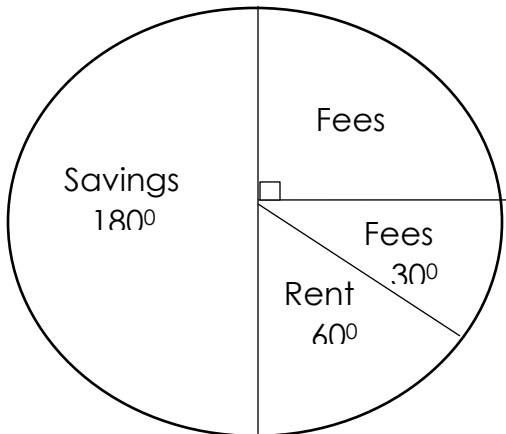
(b) How much more does he spend on fees than rent.

26. Calvin, Omuan and Cole shared some money in the ratio 2:3:5 respectively. If Omuan got 800/=, how much money was shared?

28. Find the value of x in degrees.



27. The pie chart shows how Khalid spends his salary of 720,000/=.



(a) How much does he save?

29. Kamugu went to the supermarket and bought the following;
3kg of sugar at 4,000/= per kg.
 $1\frac{1}{2}$ of oil at 2,000/= per litre.
500g of rice at 3,000/= per kg
4 bars of soap at 1,000/= per bar.

How much money did he spend?

(b) How many pupils scored the least mark?

30. Find the missing digits in the magic square below.

3	d	6
c	8	9
5	6	2

(c) How many pupils scored the highest mark?

(c) Find the average mark scored.

31. The table below shows mark scored by pupils in an exam.

Mark	10	30	40	50
No. of pupils	2	3	5	1

(a) How many pupils did the exam?

32. Construct a triangle ABC where line $AB = 5\text{cm}$, $\angle B = 30^\circ$, $\angle C = 45^\circ$. Measure BC in cm.

PAPER 9
SECTION A

1. Workout: 5 4

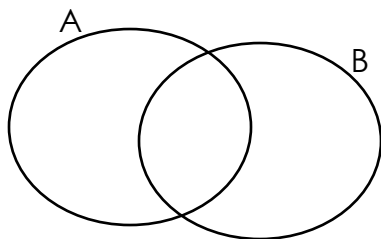
 X 9

2. Simplify: $9x - 3a + 2x + 14a$

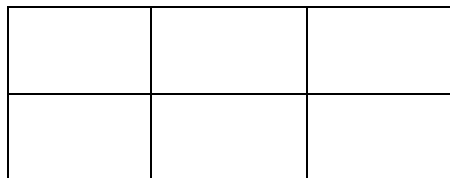
6. Express 20 as a percentage of 600.

7. Solve: $3x + 6 = 9 + 3$

3. Shade $(A - B)'$



4. Shade $\frac{2}{3}$ of the figure.



5. Write MXLVIII IN Hindu Arabic numerals.

8. Divide 6363 by 7

9. Workout:

4 1 2_{five}

 - 1 3_{five}

five

10. Construct 105° using a pair of compasses, pencil and a ruler.

13. Change 2.5m to millimetres

11. Write 0.08 as a fraction in its simplest form.

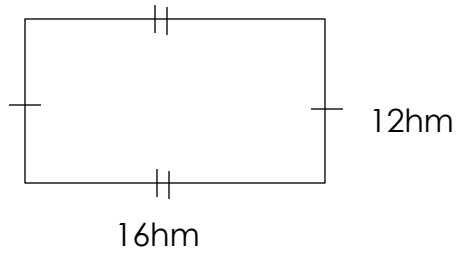
14. If $a = 4$, $y = 6$ and $g = 0$, find the value of a^2yg

12. Find the median of the following numbers:

3, 0, 5, 4, 2

15. Workout: $t^6 \times t^2$

16. Study the figure below and find its diagonal.

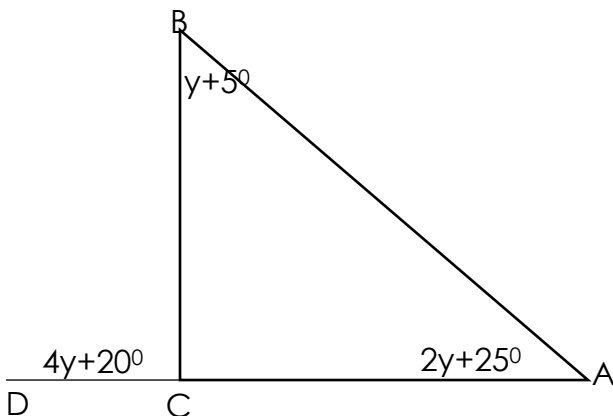


19. Peter is to plant poles in a straight line a distance of 600m. If the distance from one place to another is 6m, how many poles will be used?

17. Draw a well labelled number line and show $+4 + -6 = -2$

20. Solve: $2(3x - 6) = 24$

18. Find the value of y

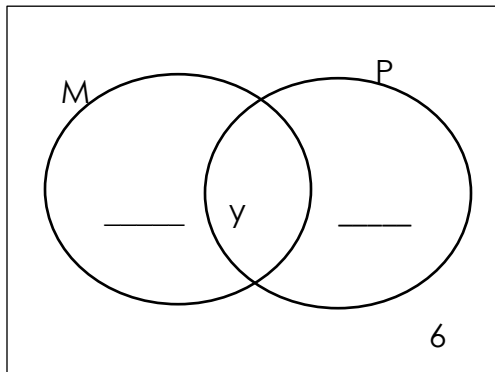


SECTION B

21. In a class party of 51 pupils, 28 drank Mirinda, 29 drank Pepsi, y drank both Mirinda and Pepsi while 6 did not drink any of the two sodas.

(a) Use the information given above to complete the diagram below.

$$n(\mathbb{Z}) = 5$$



(b) Find the value of y .

(b) Find the unknown base in; $23_x = 34_{\text{five}}$.

23. Christian, Christo and Cherbolain shared some money in the ratio 3:5:2 respectively. If Christo received 12000/=-, how much money did they share altogether?

(c) Find the number of pupils who drank one type of soda only.

24(a) Workout: $\frac{2}{3} \div \frac{1}{3} + \frac{1}{2} - \frac{2}{3}$

22(a) Expand 549 using powers of base ten.

(b) Simplify: $\frac{7.2 \times 4.8}{0.6 \times 0.012}$

26. The exterior angle of a regular polygon is $\frac{1}{2}$ of its interior angle.

(a) Find the interior angle.

25(a) A watch loses 5 seconds every one hour. How many minutes will it lose in 3 days?

(b) Find its number of sides.

(b) Express 6m/s in km/hr

27. The school bursar withdrew ten thousand shilling notes numbered consecutively from APO487984 to APO488183. How much money did the school bursar withdraw?

28. The table below represents marks scored by pupils in an interview.

Marks	30	40	25	35
No. of pupils	1	3	2	4

(i) How many pupils did the interview?

(ii) Find the range of marks.

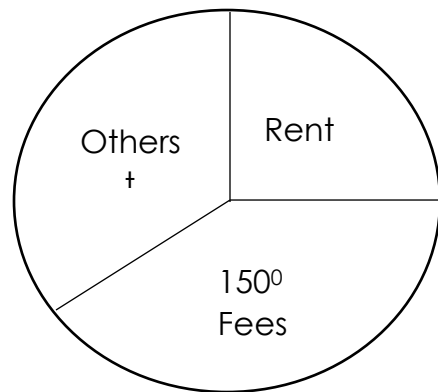
(iii) Calculate the mean score.

29. The sum of 3 consecutive odd numbers is 99. If the smallest number is y ;

(i) Find the value of y .

(ii) Find the actual numbers.

30. The pie chart below shows how Minskips spends his income of sh. 144,000 per month.



(a) Find the value of t in degrees.

(b) How much money did he spend on others?

31. Solve the equations given below.

(i) $5(p + 5) - 4(5 + p) = 6$

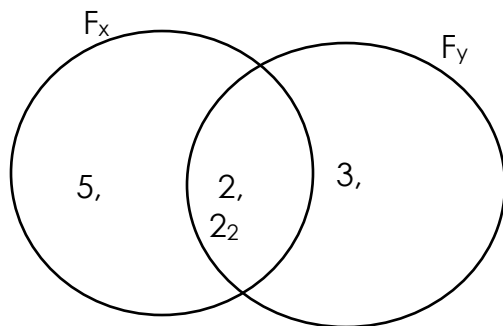
(a) F_x

(b) F_y

(ii) $2^9 \times 2^{a+4} = 2^{13}$

(c) G.C.F

32. Study the diagram below and answer the questions that follow.



(d) L.C.M

(a) Using the venn diagram above, find;

PAPER 10
SECTION A

1. Add:

$$\begin{array}{r} 901 \\ +008 \\ \hline \end{array}$$

2. Simplify;

$$2m - m + 7m$$

6. Simplify: $e^4 \times e^2$.

7. Convert 24_{ten} to binary system.

3. Write in figures;

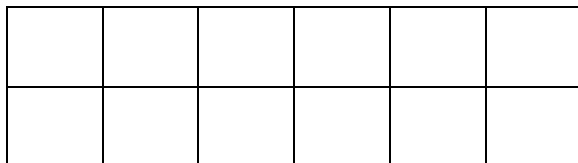
One hundred thousand.

8. Simplify: $3(x + 2) - 2(x + 3)$

4. Given that set $P = \{\text{Prime numbers from 2 to 11}\}$. List down all the numbers of set P .

9. Today is Friday, what day of the week will it be 25 days from now?

5. Shad $\frac{1}{2}$ of the diagram.



10. A $2\frac{1}{2}$ hour lesson started at 7:40am. What time did it end?

13. Divide;

$$\frac{3}{1} \div \frac{1}{2}$$

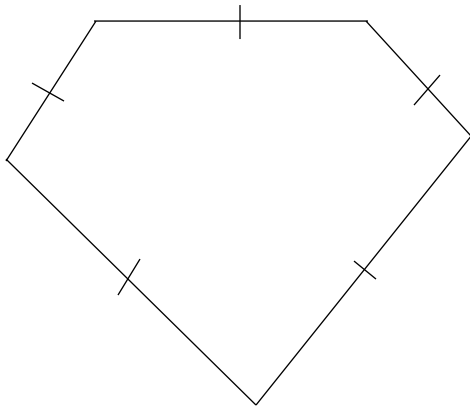
14. Expand using powers; 125

11. How many $\frac{1}{4}$ litre bottles can be obtained from 4 litres of milk?

15. Find the unknown base.

$$101_w = 26_{\text{ten}}$$

12. Find the perimeter of the figure.



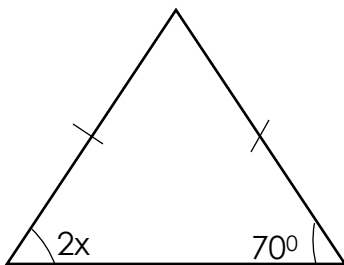
16. John had 5,000/= notes numbered from AM440871 to AM49167. How much did he have?

17. Use distributive property:

$$(7 \times 40) + (7 \times 28)$$

18. Change 72km/hr to m/s.

19. Find the value of x .



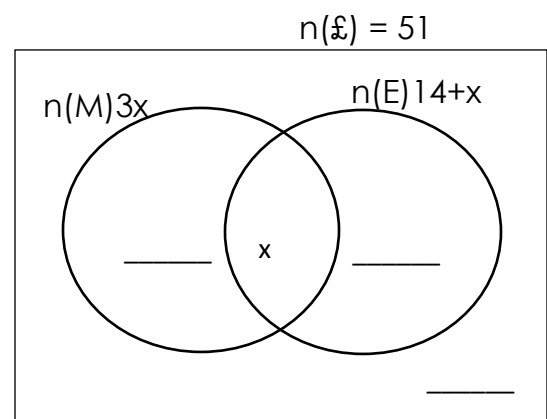
20. Solve for y in;

$$3(y+2) - 2(y+2) = -3$$

SECTION B

21. In a class of 5 pupils, $3x$ passes Maths (M), 14 passes English (E) only and $7 - x$ passed other subjects.

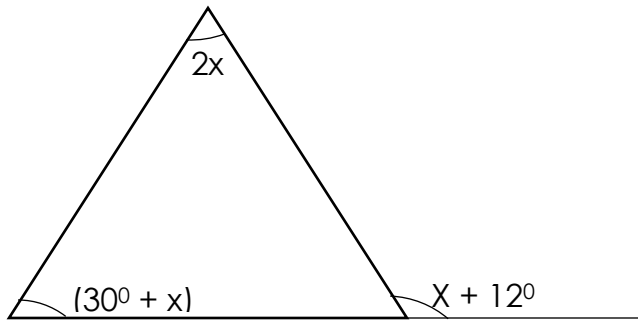
(a) Complete the Venn diagram.



(a) Find the value of x .

(b) Find the number of pupils who passed the same subject.

22. Study the diagram and answer questions that follow.



(a) Find the size of x in degrees.

25. Study the magic square and find the missing values.

11	e	b
a	8	10
c	d	5

(i) a

(ii) b

23. The mean of $2x$, $x-3$ and x is 7.
Find the value of x .

(iii) c

24. Simplify:

$$\frac{0.72 \times 0.48}{0.36 \times 1.2}$$

(iv) d

26. With the help of a sharp pencil, ruler and pair of compasses, construct a triangle MNT where $\angle MNT = 120^\circ$, $\angle NMT = 30^\circ$, $\overline{MN} = 6\text{cm}$

29. A meeting started from 11:20am and ended at 11:40pm. How long was the meeting?

27. After covering a distance of 21km. Musa realized this represents $\frac{3}{7}$ of his journey. Find the total distance of the whole journey.

30. Ann bought a set at shs. 1,000 and sold it to John at shs. 800. Workout her percentage loss.

28. Answer the questions about Sarah.

Leisure	2hrs
Reading	8hrs
Eating	3hrs
Others	1hr

Represent the above on a pie chart diameter 10cm.

31. Medi, Joseph and Peter shared sh. 24,000 in the ratio of 2:7:3.

(a) How much did Joseph get?

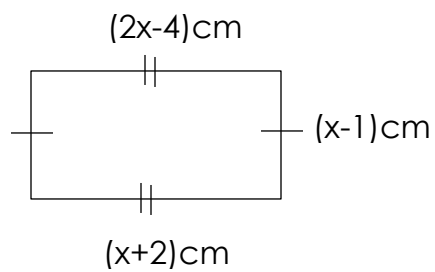
(b) Medi

(b) Find the length and width.

(c) Peter

(c) Calculate the area.

32. Study the rectangle and answer questions below.



(a) Find the value of x .

PAPER 11
SECTION A

1. Subtract;

$$\begin{array}{r} 493 \\ - 4 \\ \hline \end{array}$$

2. Set $Z = \{a, e, i, o, u\}$,

Set $X = \{a, c, d, e, u\}$

Find the members in set X only.

3. Find the next number in the sequence.

2, 3, 5, 7, _____.

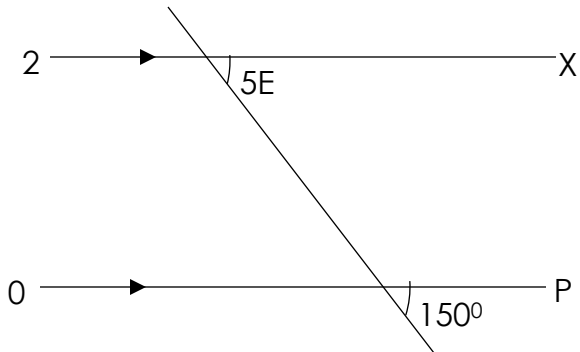
4. John had bought a shirt at 20,000/= and sold it at 15,000/=.
Find his percentage loss.

5. Workout: $\frac{1}{2}x^2 = 8$

6. Change 0.727272..... to a rational number.

7. Five pens cost 3,000/=. How much can one pay for 18 similar pens?

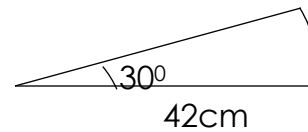
8. In the figure below, $2, X_x$ is parallel to O, P. Calculate the value of E.



9. With the help of a ruler, compasses only, construct 45° .

10. Silver spoon has 1,493 children. Express its population to roman numerals.

11. The figure below is a sector. What is the area?



12. Write 6.49 in scientific notation.

13. Find the supplement of $(3x - 60^\circ)$

14. Divide 818181 by 9.

17. Write XCIX using Hindu Arabic.

15. Find the number expanded.

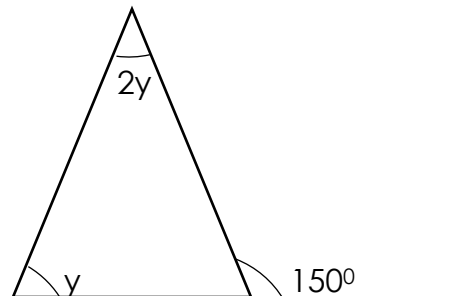
$$(3 \times 10^0) + (4 \times 10^3) + (5 \times 10^1) + (6 \times 10^2)$$

18. Solve; $10^7 \div 10^4$

19. Express $120y$ as a percentage of 20kg.

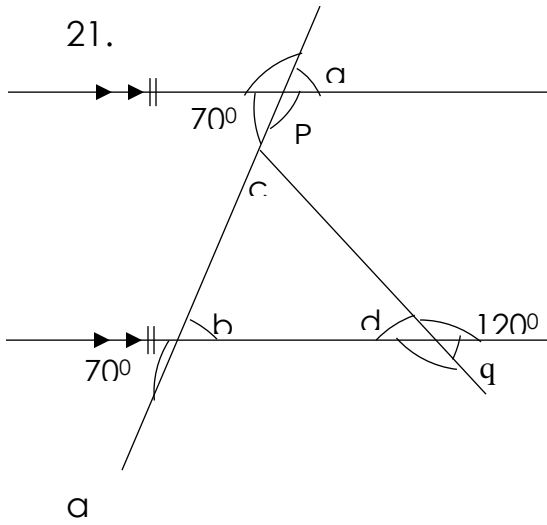
16. Five poles were placed in the field. How many gaps were left between the poles?

20. Find the value of y .



SECTION B

21.



b

d

c

p

q

22. The sum of four consecutive odd numbers is 98. If the smallest number is $x+2$, find the value of x .

23(a) $2^x \times 2^4 = 32$

(b) $3^y \div 3 = 27$

25(a) Solve;

$$\frac{x+2}{4} + 4 = \frac{x}{5}$$

24(a) Show $4x - 5 = -20$ on a well labelled number line.

(b) Akampa is 18 years older than Adrian. In 5 years' time, Akampa will be a 1 the age of Adrian. How old will Akampa be in 9 years' time?

(b) Given that $a = -4$, $b = a$ and $c = 5$. Draw a number line to show $a+b = c$.

26. Each interior angle of a regular polygon is 150° .

(a) Find the number of sides.

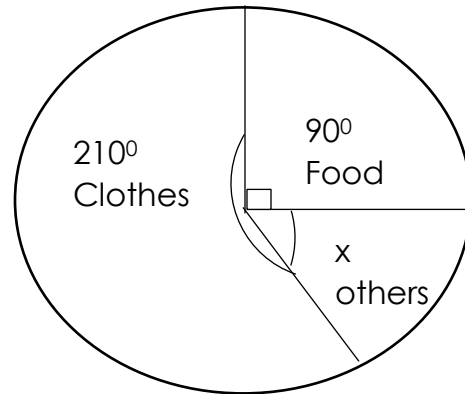
(b) Calculate the total of all its interiors.

27. In a factory, 40% are male workers and there are 28 female workers in this factory.

(a) Find the total number of pupils in this class.

(b) How many more females than males are in this factory?

29. The pie chart below shows how Mr. Olowo spends his monthly salary of 1,440,000/=.



(a) Find the value of x .

(b) How much money does he spend on food every month?

29(a) Given the number 4937, find the place value of 3.

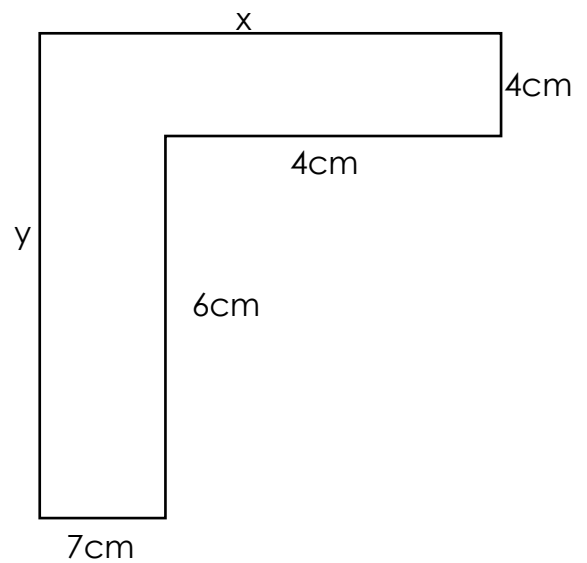
(b) Kanyeko travelled at a speed of 80km/hr covering 240km. How long did the journey take?

(b) Expand the above number in values.

(c) Write the above number in words.

30(a) The math lesson started at 8:30am and ended at 10:30am. How long did it take?

31.



(a) Find the value of x and y

(b) Workout the perimeter of the figure.

32. Construct a triangle ABCD
where line AB = 7cm and line D =
4cm and BC = 7cm

$\angle A = 60^\circ$, $\angle B = 120^\circ$.

PAPER 12
SECTION A

1. Divide $0.6 \div 0.3$

2. Find the square root of 0.25.

3. Expand 1011_{two} using exponents.

4. Change 28_{ten} to the binary base.

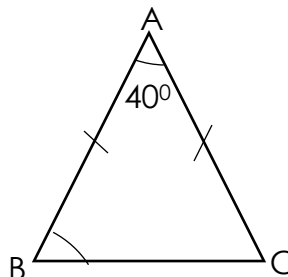
5. Round off 3.49 to the nearest one decimal place.

6. Write 79000 in scientific form.

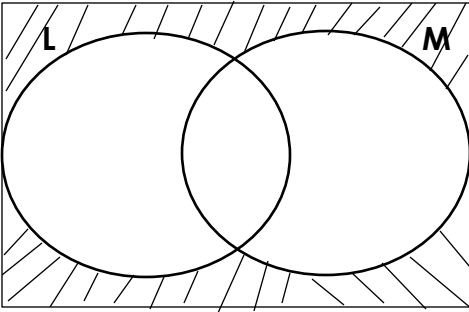
7. Write 5490 in Roman numerals.

8. Solve the equation; $\frac{2}{x-1} = \frac{2}{x-2}$

9. $\overline{AB} = \overline{AC}$ and angle $BAC = 40^\circ$, find the value of X.



10. What is shown by the shaded region in this Venn diagram?



11. Given that $x = 2$ and $y = 5$.
Find the value of $\frac{3x+14}{y}$

$$\frac{(3 \times x) + 14}{5}$$

12. Mary leaves home at 8:45am and arrives at her friend's home at 9:50am. How long did her journey take?

13. Express $\frac{2}{3}$ as a decimal fraction.

14. In a village, there are 240 people. 100 of the people have cows but no sheep. 60 people have sheep but no cows. Find the number of people who have both cows and sheep.

15. The area of a square room is 12m^2 . Find the length of one of its sides.

16. A cyclist rode a distance of 6km in 20 minutes. Calculate his speed in km/hr.

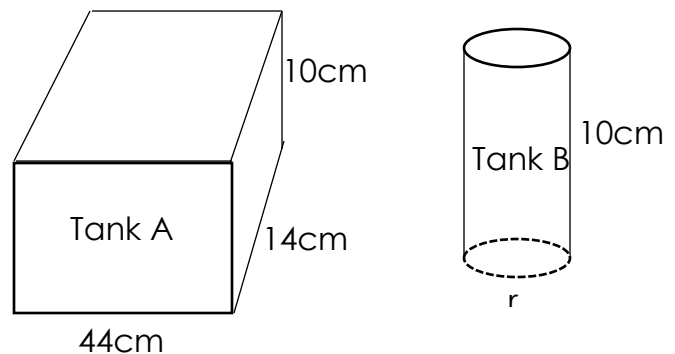
19. Add: $35.7 + 0.35$

20. Simplify: $2(7-a) - (8-a)$

17. Picfare industries packs exercise books in bundles of dozens. On Monday, the industry produced 132,000. How many bundles did they produce?

SECTION B

21. The prisms below are closed at both ends and hold the same amount of water when



(a) Find the radius of the cylinder.

18. Find the next number in the sequence

21, 20, 18, 15, _____.

(b) Find the volume of the cylinder in litres.

(b) How many pupils like both food?

22. Complete the magic square below.

X	Y	13
12	16	Z
19	W	V

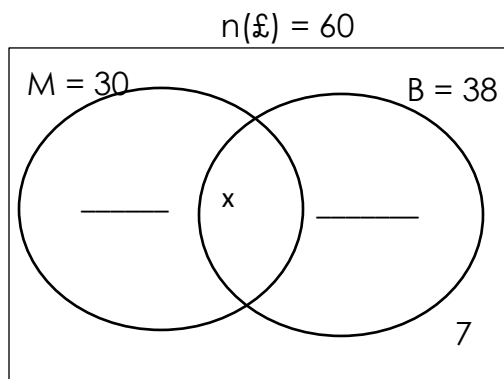
(c) How many pupils like eating only beans?

23. In a class of 60 pupils, 30 like eating meat (M), 38 pupils like eating beans (B), 7 pupils do not eat either.

24. Miria has shss. 200,000 which was decreased in the ratio 3:4.

(a) Represent the information on the Venn diagram below.

(a) How much money was she left with?



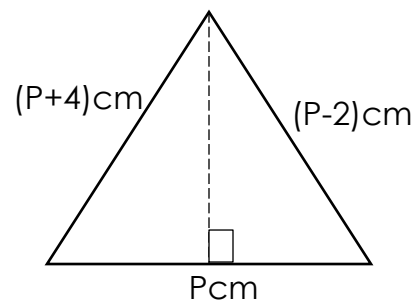
(b) Increase 24,000 in the ratio 6:5

(b) Solve for r in; $4(r-2)+(1-r) = 8$.

25. The average of 4, 10, y and 6 is 7.

(a) Find the value of y .

27. The three sides of a triangle are $(p+4)$ cm $(p-2)$ cm and P cm. As perimeter is 50cm and its height is 8cm.



(b) Find the range of the numbers.

(a) Find the value of P .

26(a) Solve; $\frac{e+1}{2} = \frac{2e-1}{3}$

(b) Work out the area of the triangle.

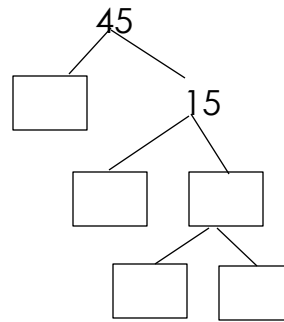
28. In a party there were $3x$ females and twice as many males. The total number of people at the party was 243.

(a) How many females were in the party?

(b) How many more males were in the party than females?

29. Find the number of sides of a polygon whose interior angle is 160° .

30(a) Complete the tree factor below.

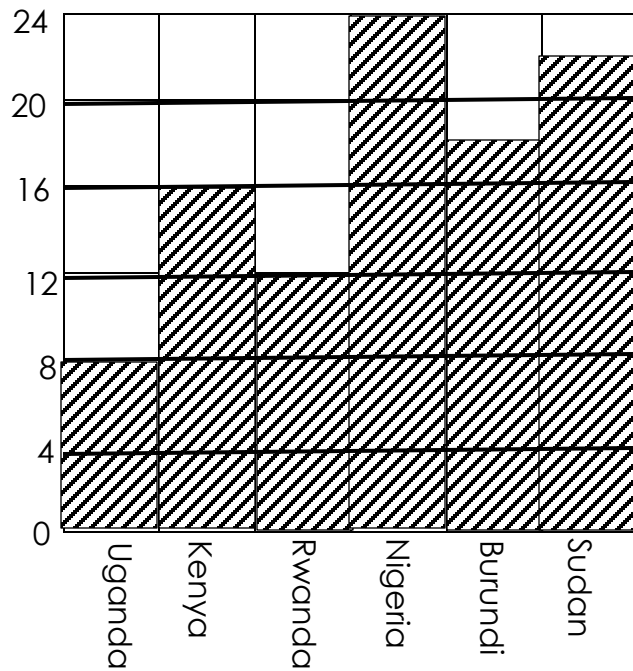


(b) List all the multiplies of 6 less than 32.

32(a) Simplify $6a + 7b - 2a + 4b$

(b) $12r - 7x + 3r + 6x - 2r$

32. Use the bar graph below to answer the questions that follow.



(a) How many visitors took part in the tour?

(b) Which country was the favourite in the tour?

(c) Which country has the lowest number of visitors?