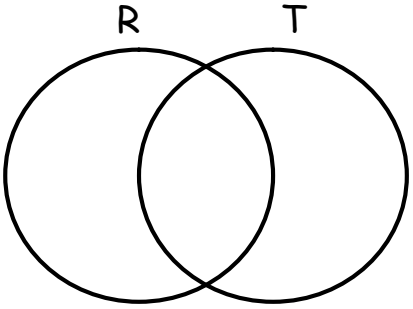
Table of Contents

SETS

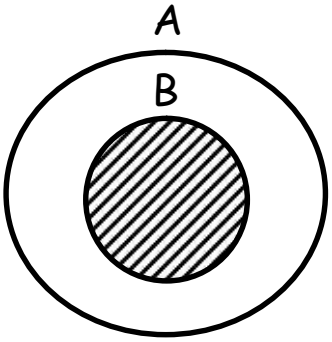
SECTION A

1. In the Venn diagram below, shade R-T



2. Give that Set Z= {a, e, i, o, u} and W= {a, b, c, d, e}. Find $Z \cap W$

3. Describe the shaded parts in the figure below



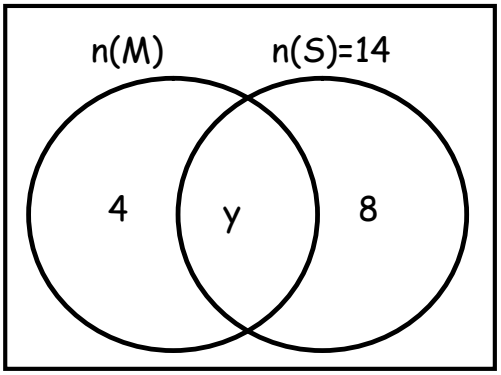
4. Given that Set X= {All cube numbers less than 30} Find $n(X)$.

5. If ϵ ={1, 2, 3, 4, 5, 6, 7, 8}, A= {1, 2, 3, 4} and B= {2, 4, 5, 6}

   Find $(A-B)^1$

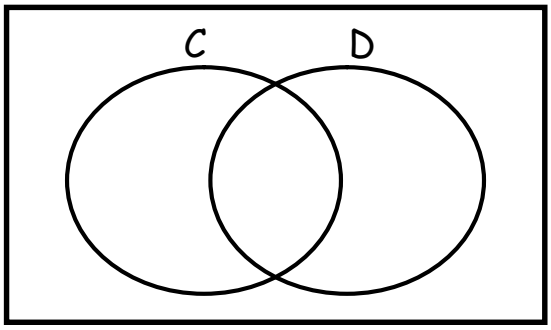
6. Given that M= {g, m, e, t}. How many proper subsets has set M?

7. The Venn diagram below shows the number of pupils who like Math (M) and Science (S)

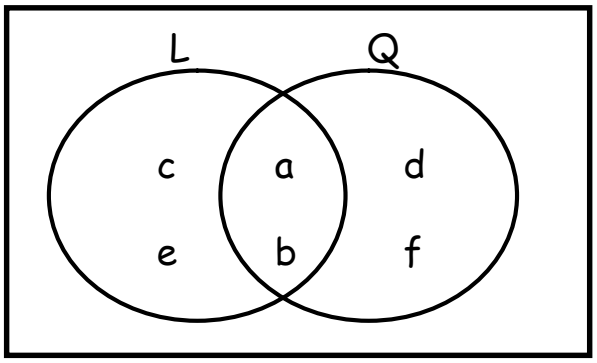


How many pupils are in the class?

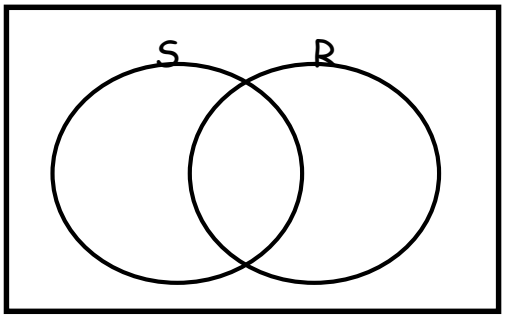
8. In the Venn diagram below shade the complement of Set D



9. If set Q= {a, t, e}. List down all the subsets of set Q.
10. Given that n(K ∪ L)=24, n(k ∩ L) =8 and n(L)=18, find n(k – L).
11. Set M has 64 subsets. How many elements are in set M?
12. The subset of set R are given as below
    { }, {L}, {K}, {L, K}. Find n(R)
13. Draw a Venn diagram to show that all hens (H) are birds (B)
14. Given that Set W has 31 proper subsets, how many elements are in Set W.
15. Use the Venn diagram below to find n (L ∩ Q)[1]



16. In the Venn diagram below, shade the region (S ∪ R)[1]

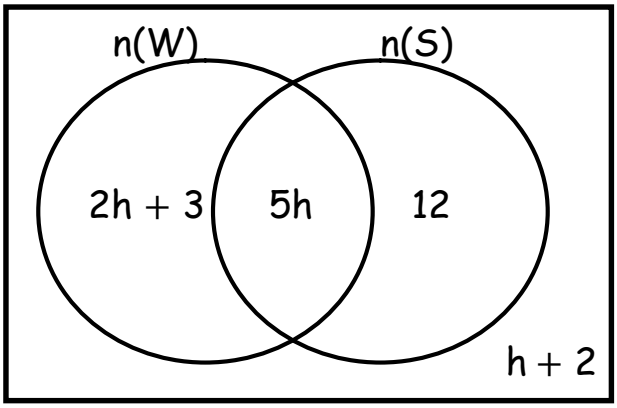


17. Given that set F= {a, b, c}, list all proper subsets of Set F

18. If Set K ∪ M= {1, 2, 3, 4, 5, 6, 7, 8} , K ∩ M= {1, 4, 7} and k^1= {5, 6, 8}. List the elements of set K
19. Given that A= {0, 2, 4, 6, 8} B= {1, 2, 3, 5, 7}. Find $n(A \cap B)^1$
20. M is a set of all Odd Composite numbers less than 30. Find n(M)

SECTION B

21. The Venn diagram below shows the number of guests who took Water (W) and Soda (S) in a party



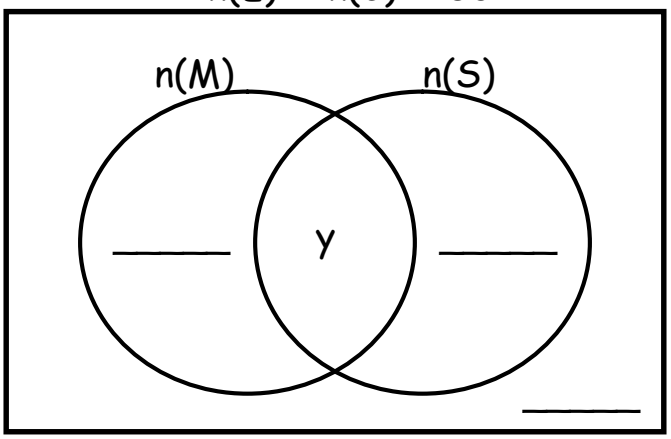
a) If 23 guests took one type of drink, find the value of h?

b) How many guests attended the party?

22. In a class of 53 pupils, all of them like English (E), 33 like Math (M) and English, 32 like Science(S) and English, y like all the three subjects while 4 like English only.

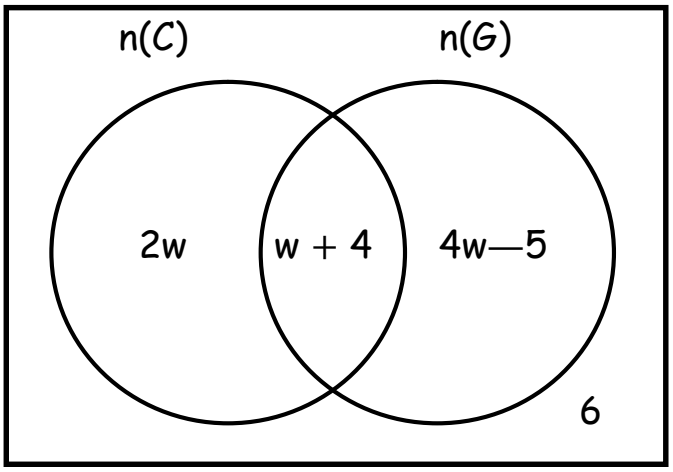
a) Complete the Venn diagram

n(E) = n(Є) = 53



b) How many pupils like all the subjects?

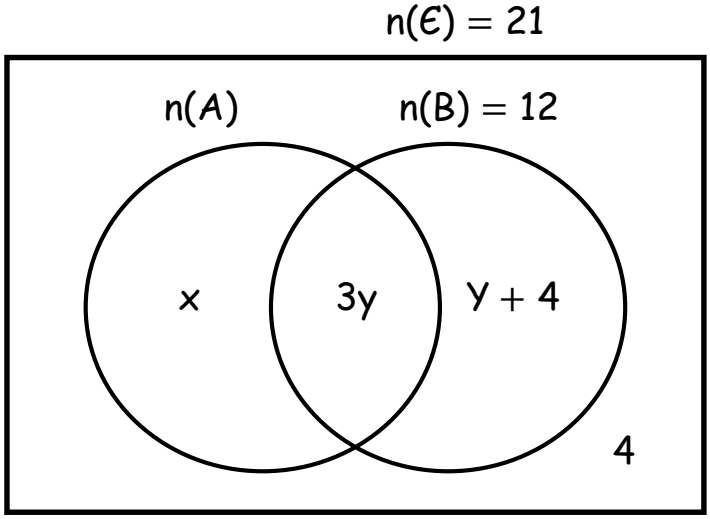
23. The Venn diagram below shows the numbers of farmers who own Cows (C) and Goats (G). Study it and answer the questions that follow.



a) If 19 farmers own Goats, find the valve of w

b) How many farmers are in the village?

24. Study the Venn diagram below and use it to answer the questions that follow



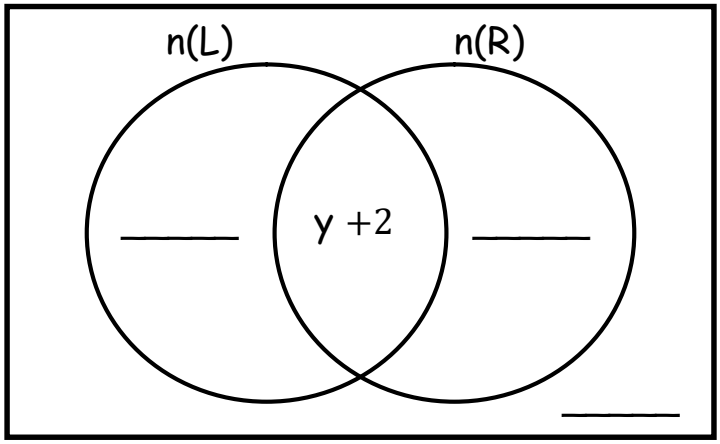
a) Find the value of y?

b) Find the value of x?

c) Find $n(A \cap B)^1$

25. In a Football team of 11 players, $2y - 2$ use left leg (L) only, $2y$ use right leg (R) only, $y + 2$ use both legs while $y - 1$ use none of the two legs. Complete the Venn diagram using the data above.

$n(\epsilon) = 11$



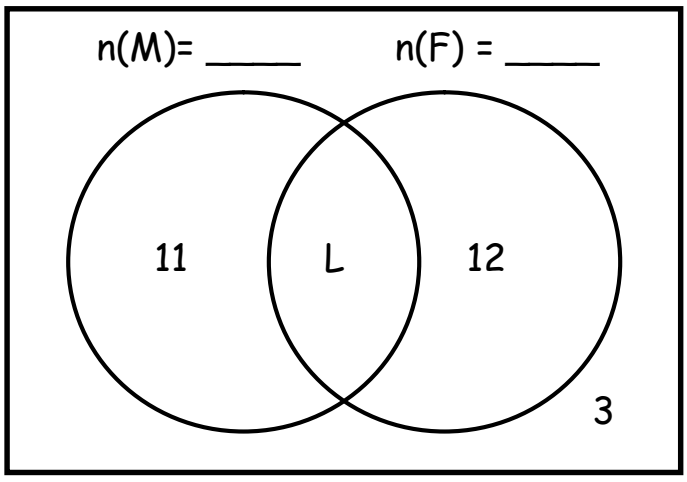
a) Find the number of players who use only one leg.

b) What is the probability of choosing a player who use both legs?

26. In a school of 50 pupils, all of them eat Banana (B), 11 pupils eat Matooke (M) but not fruits (F), 12 pupils eat fruits but not Matooke, L pupils eat all the three types of foods and 3 pupils eat only Banana.

a) Complete the Venn diagram below using the above information

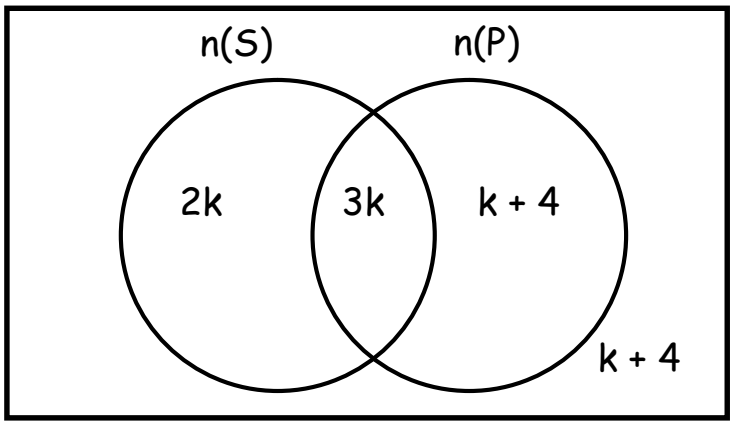
$n(B) = n(\epsilon) = 50$



b) How many pupils eat all the three types of food?

c) Find the probability of that a pupil picked at random does not eat fruits?

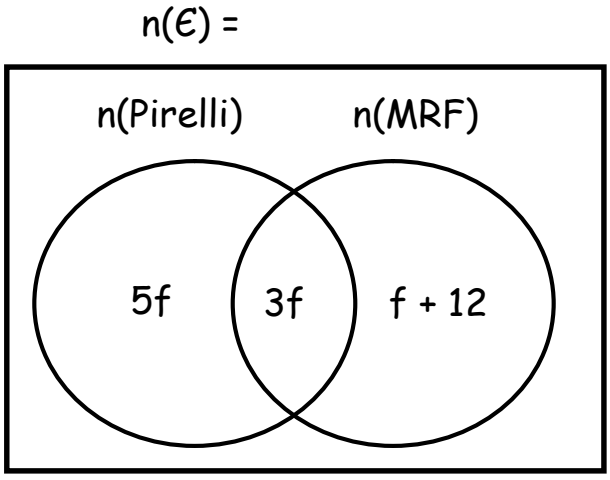
27. The Venn diagram below shows the number of farmers who grow Soya Beans (S) and Peas (P) in a certain village



a) If 31 farmers do not grow Peas. Find the value of K?

b) How many farmers grow one type of crop?

28. The Venn diagram below shows different car tyres bought by different traders at City tyres in one week. Study it and use it to answer the questions that follow.



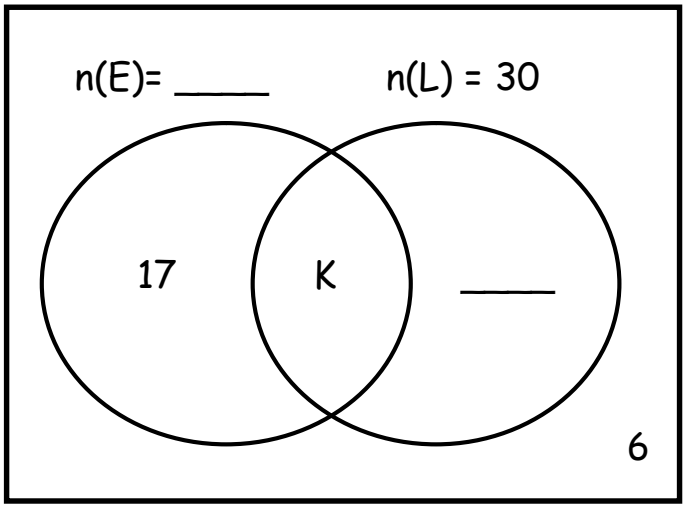
a) Find the value of f if the number of people who bought Pirelli is the same as that of those who bought MRF tyres

b) Find the total number of tyres sold by the City tyres in that week.

c) How many people did not buy MRF tyres?

29. In a company, two languages are spoken by the workers, Lusoga (L) and English (E), 30 workers Speak Lusoga and K workers speak both Lusoga and English, 6workers speak neither of the two languages while 17 workers speak only English. The number of pupils who speak Lusoga only was twice that of those who speak both Lusoga and English.

a) Use the information above to complete the Venn diagram



a) Find the number of workers who speak both languages?

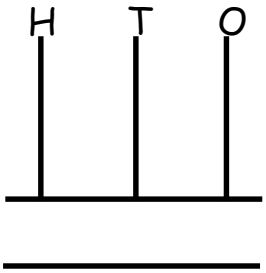
b) Calculate the total number of workers in the company

END

WHOLE NUMBER

SECTION A

1. Write Nine million three hundred thousand three hundred two in figures.
2. Show 203 on the abacus below



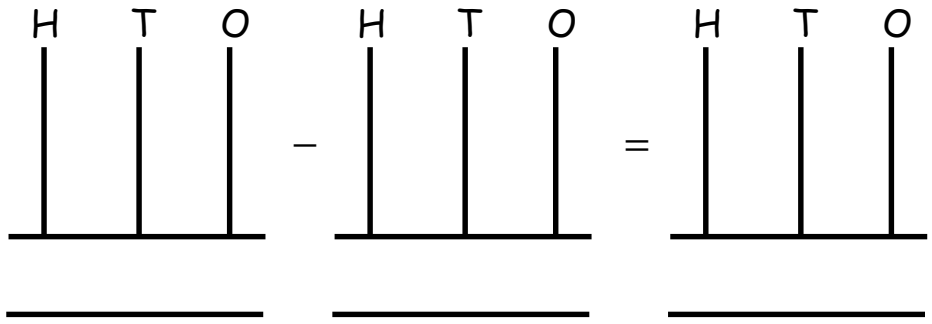
3. Write the place value of 3 in the number 134_{five}
4. Round off 3927 to the nearest hundreds
5. Workout: $110_{two} \times 11_{two}$
6. Express 19_{ten} to binary base
7. Solve $302_p = 200_{five}$. find the value of p.
8. Express 144 in roman numerals.
9. Find the quotient of the value of 3 and the value of 5 in the number 3456
10. Workout: $243_{five} - 34_{five.}$
11. Write 963 in expanded form using values.
12. Workout $345_{six} + 34_{six.}$
13. Alice celebrated her birthday when she was CXLVII years. Express Alice's age in Hindu-Arabic numerals.

14. Amito planted 100 trees and the distance from one tree to another was 50m. Find the total distance between the first tree to the last one.
15. Find the value of the digit in hundredths place value in the number 342.1468
16. Round off 99.75 to the nearest whole number.
17. Tamale has two tanks MXLVI and CDXCV written on the top of them showing the quantity of water they hold. Find the quantity of water the two tanks hold in the Hindu Arabic numerals.
18. Find the expanded number:
    $(3 \times 10^{3}) + (7 \times 10^{-1}) + (5 \times 10^{-3})$.
19. Write the value of 3 in 432_{six}
20. Write 202,020 in words.

SECTION B

21. Jane wrote the smallest and largest numbers using all the digits 7,3,0,4.
    a) Write the smallest number she wrote.
    b) Write the largest number she wrote.
    c) Find the difference between the largest and the smallest number formed.
22. Convert 413_{five} to quaternary base.
23. What number has been expanded to give;
    a) $(1 \times 2^{3}) + (1 \times 2^{2}) + (0 \times 2^{1}) + (1 \times 2^{0})$

b) Workout 523-202 using the abacus below.



24. Solve:

a) $143_{five}+m=342_{five}$.find m.

b) The doctor at the hospital recorded the patient's temperature as XXXVIII℃ during the arrival and after the treatment, the temperature was taken as XXXVI℃. Find the difference between the patient's temperatures in Hindu Arabic numerals

25. The table below show the addition of numerals in the base five. Use it to answer questions that follow.

+	0	1	2	3	4
0	0	1	2	3	4
1	1	2	3	4	10
2	2	3	4	_____	_____
3	3	4	10	11	12
4	4	10	_____	12	_____

Complete the additional table above correctly

26. Workout $204_{five} \div 14_{five.}$

27. Given that numeral 9876

    a) Write the place value of 9 in the above numeral.

    b) Find the sum of the values of 8 and 7 in the above numerals

28. Convert 1101_{two} to quinary base.

29. a) If $3y_{six} = 10110_{four.}$ Find the value of y

    b) Express 1011_{two} to decimal base.

30. a) Expand 36.24 using exponents.

    b) Write in figures: Four hundred sixteen thousand nine hundred twenty three

END

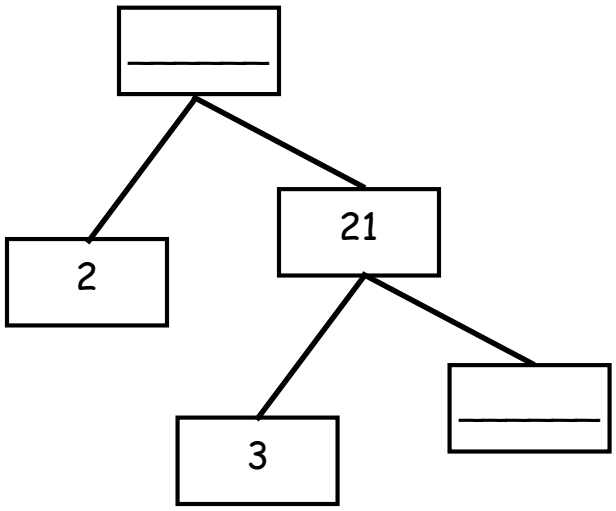
OPERATION ON WHOLE NUMBERS

SECTION A

1. Workout: 32×4
2. Simplify: $14 + 28 \div 7$
3. Write 645.3 in standard form
4. Simplify: $8^3 + 4^0$
5. Workout $(2.5 \times 44) + (2.5 \times 36)$ using distributive property
6. What should be added to 513 to get 721?
7. Workout $16 \div 4$ using repeated subtraction.
8. Simplify: $\frac{8^3 \times 8^4}{8^3}$
9. Workout $(17 \div 5) + (13 \div 5)$
10. Write a single number whose standard form is 8.43×10^{-1}
11. Use commutative property to workout $4 + 3$
12. Workout 3×12 using repeated addition
13. Write 0.00783 in scientific form
14. Workout $14 - 18 \div 3 + 5$
15. A temperature gun uses batteries of 1.5 volts. In order for the temperature gun to work, it requires 24volts. How many such batteries will the temperature gun require?
16. Workout $436 - 504 + 237$
17. Evaluate :$3^x \div 3^2 = 27$
18. Workout $(24 \div 6) - (60 \div 6)$ using distributive property

19. Use the associative property workout $(5 \times 8) \times 2$

20. Find the missing number in the factor tree below



SECTION B

21. The reading of an electric meter at the beginning of the month was 00642 and 00736 at the end of the month.

    a) How many units of electricity were consumed that month?

    b) If a unit of electricity costs Sh.800. Find how much the above consumption costs.

22. During an election, Amito, Bulege and Chebet stood for elections. Amito got 219 votes, Bulege got 26 votes less than Amito while Chebet got 212 votes more than Bulege.

    a) How many votes did Bulege get?

    b) How many votes did they get altogether?

23. A school library contains the following books.

- 316 SST books
- 400 Math books
- 224 Science books
- 502 English books

a) How many books are in the library altogether?

b) How many more math books than science books are in the library?

24. The sum of the values in the table below is the same vertically, horizontally and diagonally. Fill the missing values to complete the table.

13	a	11
b	c	12
d	14	7

25. Solve for n in the following

a) $2^n \times 3^3 = 108$

b) $3^{2n} = \frac{1}{81}$

26. A tank is filled with jerry cane of 2.5 litres of milk. In order for the tank to be full of milk, it requires 250 litres.

a) How many such jerry cans of milk will be required to make the tank full?

b) If the cost of a jerry can of milk is Sh. 12,000. How much money will be spent to buy the required jerry cans of milk.

27. A thread of length 161 metres was shared by some girls. The average length of thread each girl got was 23 metres

a) Find the number of girls which shared the thread

b) A man of three children, Tom, Peter, and John shared the mangoes as follows; 21 mangoes were given to john, 12 mangoes to peter and 36 mangoes to Tom. How many mangoes did the man have?

28. Divide $31_{five} \div 22_{three}$ stating your answer in base ten

29. In Kyabanzinga Cup Tournament, 3 points were awarded for a win, 1 point for a draw and 0 points for a loss. Four teams participated and the results were recorded as shown below.

TEAM	P	W	D	L	PTS
BUKOOLI FC	7	4	2	1	
BUTEMBE FC	7	3	4	0	
BUDYOPE FC	7	2	3	2	
BUSEDE FC	7	5	1	1	

KEY

P - Played W - wine D - draw L – Loss

Complete the table with the points for each team.

30. Solve for P; $P^2 + P^2 = 112_{five}$

a) The scientific notation of a number is 8.5×10^{-3}

Find the notation

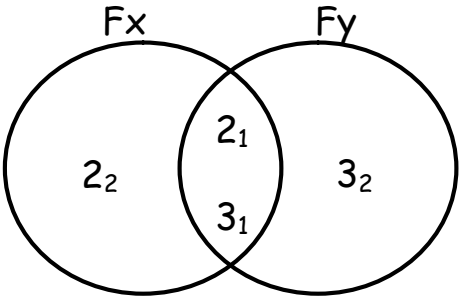
END

NUMBER PATTERNS AND SEQUENCE

SECTION A

1. List down all the multiples of 3 less than 20.
2. Find the GCF of 24 and 30.
3. Find the next number in the sequence.

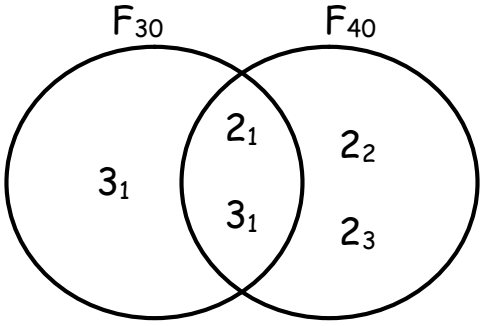
   4, 6, 8, 9, _____
4. Use the Venn diagram below to find the LCM of F_X and F_Y



5. Find the product of the third and fourth square numbers.
6. The product of the LCM and GCF of two numbers is 300. If one of the numbers is 15, find the second number.
7. Find the least number of sweets that can be given to 12 or 16 pupils and 3 sweets remain.
8. Workout the sum of the next two values in the sequence below

   27, 9, 3, 1, _____, _____
9. Find the 8^{th} triangular number.
10. Express 54 as a product of its prime factor.
11. Find the square root of $3\frac{1}{16}$.
12. Without dividing, show which of the numbers 170 and 5007 is divisible by 3.

13. The Venn diagram below shows the prime factors of 30 and 40. Use it to answer questions that follow



Find the Highest Common Factor of 30 and 40

14. Find the smallest number that can be divided by 8 or 12 and leaves no remainder.
15. Find the cube root of 27.
16. Given that the prime factors of 54 are in the form $2^1 \times 3^2 \times K$. Find the value of K.
17. List down all odd numbers between 1 and 20.
18. Without dividing, prove whether 976536 is divisible by 11
19. Prime factorize 72 and state your answer in set notation.
20. Solve for the value of m if $2^m \times 2^{2m} = 64$

SECTION B

21. The average of 3 consecutive odd numbers is 15, if the largest number is P.
    a) Find the value of P
    b) Work out their median

22. Three daughters; Mary, Betty and Mercy visit their parents after 4 days, 6 days, and 8 days respectively
    b) After how many days will they visit their parents together?
    b) If they last visited their parents together on Wednesday, when will they visit their parents together again?

23. a) The HCF of two numbers is 6 and their LCM is 36. Find the numbers if their ratio is 2:3
    b) In a line of boys, James is 11^{th} from either side of the liner. How many boys are in the line?

24. A candidate read 52 pages of a book in 4 hrs. If he read two more pages each hour than the previous one. How many pages did he read each hour?

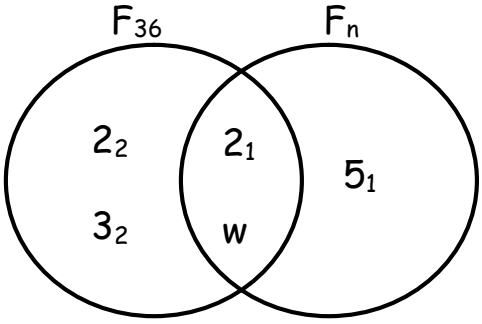
25. The LCM of two numbers is 48. If one of the numbers is 16. Find the other number if their GCF is 4.

26. The mean of consecutive integers is 6. If their median is x.
    a) Find the value of x
    b) Workout all the integers.
    c) Find their range

27. A taxi covered 304km in 4 days. If it covered 4 more km in each day than the other. Find the distance covered in each day?

28. At Mbale bus park, buses travelling to Lira and Kampala leave after every 40 minutes and 60 minutes respectively. If the two buses leave Mbale together at 6:00 am. At what time will buses to the two towns leave Mbale again

29. Study the Venn diagram below and use it to answer the questions that follow



a) Find the value of w

b) Find the value of n

30. The sum of three consecutive odd numbers is 81

a) Find the number if the first number is n^2.

b) Find the sum of second and third number.

31. A mother bought some pens for her children. When she put them in groups of 9, seven pens remained. When she puts them in groups of 8 only 4 pens were left but when she grouped them in groups of 8 only 1 pen was left. The least number of pens that the mother bought.

END

FRACTIONS

SECTION A

1. Workout: $3\frac{2}{4} \div 1\frac{1}{2}$
2. Express 0.16 as a fraction in its lower term
3. Add :$^{2}/_{3} + {}^{1}/_{4}$
4. Calculate the product of $^{1}/_{4} \times {}^{2}/_{3}$
5. Jane ate$^{2}/_{3}$of thesugar cane in the morning and $^{1}/_{4}$ of the same sugar cane in the evening. What fraction did he eat altogether?
6. Find the difference between $1^{1}/_{2}$ and $^{2}/_{3}$.
7. Express 0.2727..... as a vulgar fraction in its simplest form
8. What is $^{2}/_{3}$ of Sh. 48000?
9. Simplify: $^{2}/_{3}$ of $^{3}/_{5} + {}^{1}/_{4}$
10. Workout: $9.8 \div 0.07$
11. Convert: $3\frac{3}{5}$ into improper fraction
12. Change $^{4}/_{11}$ to decimal fraction
13. A teacher spent $^{1}/_{6}$ of his salary on rent, $^{1}/_{4}$ of the remainder on transport and was left with Sh. 36,000. How much money does the teacher earn?
14. After covering $^{3}/_{5}$ of the journey, the motorist was left with 40km to reach the destination. Find the total distance a motorist had to cover?
15. Calculate the quotient of 0.36 and 6.00

SECTION B

16. In Mpumudde Primary School, $^1/_4$ of pupils in the P6 class like Mathematics, $^2/_3$ of the remainder like English. The rest of pupils like social studies. If those who like social studies were 33;
    a) Find the fraction of those who like social studies
    b) How many pupils are in P.6 class?

17. a) Simplify: $\frac{34.1 - 19.7}{0.6 \times 0.8}$
    b) Workout: $3\frac{1}{2} \div 2\frac{1}{2} \times 2\frac{2}{3}$
    c) Express 0.5454 as a common fraction

18. In a certain village, the fraction of female is $^1/_5$ more than that of males. The village has 2500 males.
    a) Find the fraction of male in the village
    b) Calculate the total number of people in the village

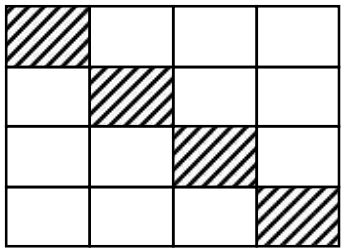
19. In a school of 3600 students, $^3/_5$ are boys, $^5/_{12}$ of the girls are in lower class and $^5/_6$ of the boys are in upper classes.
    a) Find the actual number of boys.
    b) Find the total number of students in the lower classes

20. a) A worker spends $^1/_7$ of his monthly salary on food, $^2/_3$ of the remainder on rent and saves the rest. Find his annual salary if his monthly saving is Sh. 140,000.
    b) Workout his total monthly expenditure

21. a) Reduce $^{18}/_{72}$ to its simplest form

    b) Arrange these fraction $^{2}/_{3}, ^{1}/_{4}, ^{3}/_{8}$ and $^{5}/_{6}$ in ascending order

    c) Describe the un shaded fraction



22. a) A girl read $^{1}/_{3}$ of a book on Monday and $^{2}/_{5}$ of it on Wednesday, she remained with 20 pages to read. How many pages have the book?

    b) Convert 0.166..... into a common fraction in its simplest form

23. a) Simplify 0.37 – 1.03+2.6

    b) The product of two numbers is $^{7}/_{8}$, one of the numbers is $^{2}/_{8}$. Find the other number.

24. Tap B takes 3 minutes to fill the tank and tap K takes 6 minutes to draw water from the tank

    a) How long will it take to fill the same tank if both taps are left open at the same time.

    b) If the tank had $^{2}/_{3}$ of water, how long will it take to fill the remaining part of the tank if both are open at the same time

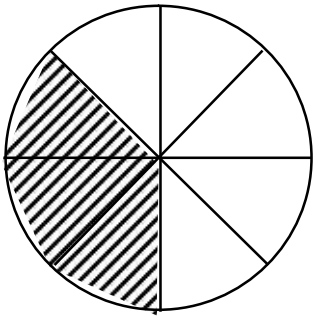
25. a) Simplify: $^{4}/_{5} \times {}^{3}/_{7} \div {}^{9}/_{14} + 2\frac{7}{15}$

    b) Change 2.333 into the vulgar fraction

26. a) Find the product of 18.7 and 2.6 using lattice method

    b) Convert $\frac{131}{13}$ to a mixed fraction

27. The shaded parts in the figure below represents the number of boys in a school.



If there are 490 girls in the school.

a) How many pupils are in the school?

b) How many more girls than boys are in the school?

28. (a). Mr. Mukasa spent $^4/_7$ of his salary and saved the remaining money if he saved Sh. 180,000.

a) What was $^2/_3$ of his salary?

b) Workout : $\frac{2.4 \times 0.6}{0.12}$

29. In primary seven, $^1/_3$ of the pupils were absent on Friday and 80% of the pupils were present on Saturday, if 10 more pupils were absent on Friday than Saturday,

a) How many pupils were in the class altogether?

b) Workout : $\frac{3.9+3.6}{0.06\times0.5}$

30. Tap A can fill a water tank in 6 minutes and tap B can fill the same tank in y minutes. If both taps are opened at the same time, they fill the tank in only 2 minutes.

a) Find the value of y

b) Simplify: $\frac{5.5 \times 0.08}{6 + 1.2}$

31. At BAT concert, $\frac{5}{7}$ of the population were female and the rest were males. If 25% of the male were children and 60 more female than males attended the concert, how many children attended the concert if $^{3}/_{5}$ of the female were adults.

32. Opoka has fuel tank connected to the taps K, L, and M, tap K fills the fuel tank in 2 hours, tap L empties the tank in 4 hours and tap K empties the same tank is 12 hours. If Opoka opened all the taps at the same time. How long will it take the taps to fill the fuel tank?

33. In a class, $^{1}/_{5}$ of the girls are boarders while, $^{1}/_{3}$ of the boys are day scholars. The percentage of the girls in the class is 60%. the class has 10 boys who are day scholars

a) How many pupils are in the class?

b) Find the number of girls who are boarders.

34. A petro tank is connected to taps A, B and C. Tap A alone fills the tank in 4 minutes, tap B alone fills the tank in 6 minutes and tap C takes 8 minutes to draw all the water from the tank. If both taps are opened at the same time, how long will it take the taps to fill the tank?

END

PERCENTAGES, RATIOS AND PROPORTIONS

SECTION A

1. 4 mangoes cost Sh. 1,200. Find the cost of 8 similar mangoes
2. Express 20 minutes as a ratio of the one hour
3. Atim ate $^1/_3$of her bread in the morning. What percentage of the bread remains?
4. On Mukama's farm, 20% of the animals are goat, 45% are sheep and the remaining animals are cows. Find the percentage of cows.
5. 8 men take 5 hours to clear a piece of land. How many men are needed to clear the same piece of land in 10 hours working at the same rate.
6. A motorist covered a distance of 120km in 3 hours. At what speed should he ride in order to cover the same distance in 6 hours?
7. $^5/_8$ of petrol in a tank lasts lorry to cover 45km. how many km will $^2/_3$ of the petrol in the tank last the lorry?
8. Oketch had 30km still cover after travelling $^3/_5$ of the journey. How long was the journey?
9. When the price of a bag of cement of Sh. 24000 is increased by k% it becomes Sh. 25920. Find the percentage increase.
10. On selling an article at Sh. 84400, trader makes a profit of $5\frac{1}{2}$%. Calculate the actual profit which was made by the trader.
11. The price of a radio was Sh. 300,000. If it has reduced by Sh. 30,000, in what ratio has the price decreased?

12. The ratio of boys to girls is 2:3 respectively. If there are 27 girls, how many pupils are in the class?
13. What number when increased in the ratio 5:4 becomes 20
14. Aketch bought sugar at a discount of Sh. 12,000. Find the amount she paid if she was supposed to pay Sh. 72,000 before the discount

SECTION B

15. AKumu scold a bicycle for Sh. 80,000 making a loss of 20%. What was her buying price?

16. In a village the ratio of men to women is 4:7. If there are 15 men less than girls

a) Find the number of women in the village

b) Find the total of people in the village.

17. The amount of water in the tank at Kampala junior school decreased in the ratio of 4:7. If there were 490 litres of water.

a) How much water was left in the tank?

b) On a burial ceremony, the ratio of women to children was 3:5:4. If there are 54 more than men who attended the burial. Find the number of children at the ceremony.

18. In a parent's meeting at Mpande Primary School the ratio of male to female parents was 3:5 respectively. If 30 female parents attended the meeting.

a) How many male parent were in the meeting?

b) If $^1/_3$ of the male parents were below the age of 40. How many male parents were above the age of 40?

19. The price of a panga was increased by 10% to become 3520 shillings.

a) Calculate the original price of the panga

b) A trader bought 6 duck each at Sh. 25000 and sold all of the them for Sh. 124,000. Calculate the loss made after selling each.

c) Calculate the percentage loss made by a trader

20. The buying price of a chair was Sh. 300,000. If it was later sold it for Sh. 360,000.

a) Calculate the percentage profit made

b) A buyer paid Sh. 900,000 for a bicycle after being given a discount of 100,000. Calculate the percentage discount.

END

SIMPLE INTEREST, PRINCIPAL, RATE AND TIME

SECTION A

1. Amina deposited Sh. 240,000 in a bank that gives 8% per annum interest. How much interest did she get after 6 months?
2. Maata got a loan of Sh. 120,000 from a Micro Finance Bank at a simple interest rate of 8% per annum. He paid an interest of Sh. 7,200 on the loan. How long was the loan?
3. What sum of money will yield an interest of Sh. 36,000 after 9 months of 10% per year?
4. Auma borrowed Sh. 200,000 in bank which offered an interest of Sh. 20,000 for 2 years. Find the interest rate the bank got from Auma.

SECTION B

5. Kato bought 30 shares from a village SACCO at rate y% per annum. Each share was 3000. At the end of $2\frac{1}{2}$ years, his account had a total amount of Sh. 495,000. Find the value of y

6. Abel deposited Sh. 750,000 in a bank. The bank offers a simple interest at a rate of 9% per year. After some time, Abel had an amount of Sh. 800,000in a bank

a) Find the interest Abel earned?

b) Calculate how long the money was in the bank

7. A teacher deposited his monthly salary in a bank which offers a simple interest rate of $2^{1}/_{2}$ per year. After 9 months his account had an amount of Sh. 163,000. Calculate the money the teacher deposited.

8. Akello bought 120 shares from Busoga Cooperative Society at a simple interest rate of 30% per year. Each share costs Sh. 3000

a) Find Akello's total interest after $3\frac{1}{2}$ years.

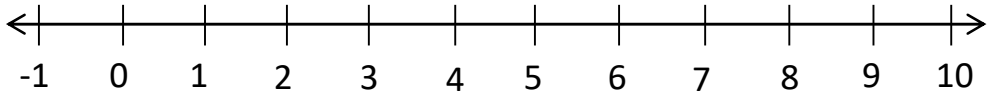
b) Calculate the total amount of money Akello has in Busoga cooperative society after $3\frac{1}{2}$ years

END

INTEGERS

SECTION A

1. Simplify: -2 + -3
2. Arrange -6, -1, 0, 3, 2, -4 in descending order
3. Workout 3 × 2 using the number line below



4. Solve: 3y = 5 (finite 7)
5. Workout: $^{-}6 - {}^{-}8$
6. If today is Monday, what day of the week was it 29 days ago?
7. Simplify: $^{+}5 - {}^{-}1$
8. Workout: 3 − 5 = _____ (mode 6) using dial method
9. The body temperature of patient was 39℃ before treatment and 37℃ after treatment. Find the decreased in the body temperature of the patients
10. Solve: 4w – 4 = 5 (finite 7)
11. Find the mean of the following numbers: 3 ,6 ,0, -4, -6, 5 and 7
12. If it is February now, what month of the year was it 37 months ago.
13. Given that 3 + 5 = n (finite 6). Calculate the value of n
14. Divide: 3 ÷ 2 = ____ (mode 5)
15. Find the least number of apples that when divided by 5, 2 apples remain and when divided by 8, 3 apples remain.

16. Write the integers represented by the arrow on the number line below

17. A man died at the age of 38 years. If he was born in 12BC, in which year did he die?

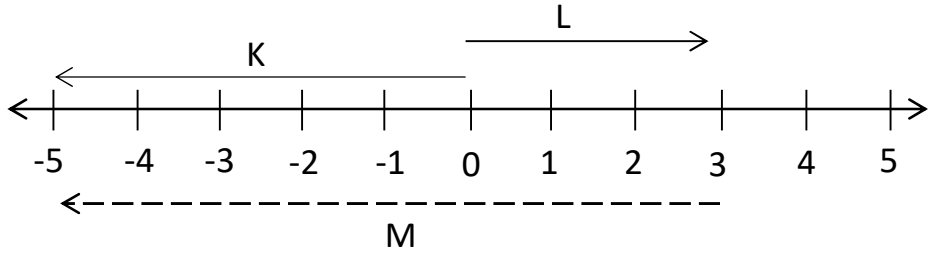
18. Find the median of the integers: $^{+}7, ^{-}4, ^{-}6, 0, ^{+}3, ^{+}2$

19. Peter moved four metres backwards and another four metres backwards. Write his last position using integers.

20. When marking a test of 20 questions, a teacher awarded 5 marks for every correct answer but deducts 2 marks for every wrong answer. If a candidate got 72 marks. How many questions did the candidate fail?

SECTION B

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



a) Write the integers represented by the arrows

i) M _____

ii) K _____

iii) L _____

b) Write down the subtraction Mathematical sentence for the above number line

22. Ofwono stood on a drawn number line in front of the office at zero while facing the positive direction. He made five steps forward, changed and faced the negative direction while still at five and moved four steps backwards.

a) Show Ofwono's movement on a number line.

b) Write the mathematical sentence for his movement

23. Use $<, > \ or \ =$ to complete the statements below correctly.

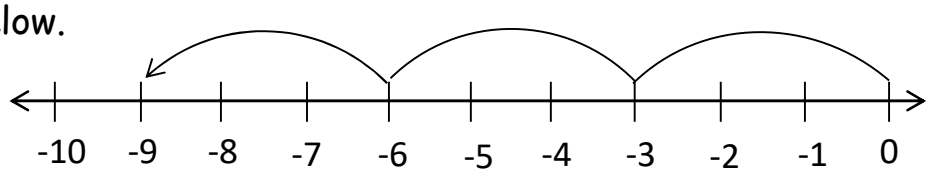
a) $3 \times 3 + 4$ _____ $3 + 2 \times 4$

b) 14 days _____ 0 fortnights

c) $8^0 + 4$ _____ $42 + 1$

d) 3×5 _____ $5 + 9$

24. a) Write a mathematical statement represented on the number line below.



b) The price of a kilo gram of sugar dropped by Ug Sh. 700. If the new price of a kilogram of sugar is Ug Sh. 3600. Find the price before the drop.

25. In a quiz with 25 questions, a teacher awarded 4 marks for each correct answer given and deducted one mark for every wrong answer.

a) If Muganda got 70 marks, how many correct answer did he get?

b) If Odongo got 22 questions correct, how many marks did he get?

26. Workout the following using a dial method

    a) $3 - 4 =$ _____ (mode 5)

    b) $2 + 5 =$ _____ (finite 8)

    c) $4 \times 2 =$ _____ (finite 7)

27. a) If yesterday was Monday, what day of the week will it be 43 days from now?

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

28. a) It is 7:00 am. What time will it be after eight hours from now?

    b) Workout $^{-}4 + {}^{+}5$ using a number line

    c) Find the additive inverse of $^{-}5$

29. Represent the following number operation on the number line

    a) $^{-}5 + {}^{+}7$

    b) $^{-}7 - {}^{-}3$

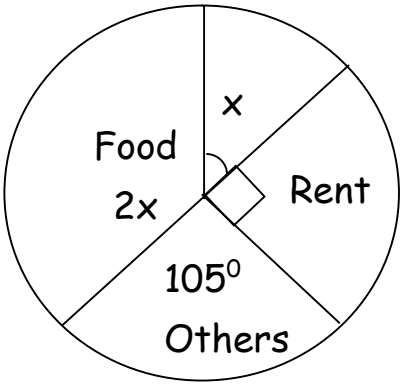
30. If today is Monday 27th May 2023. What day of the week will it be on 6th September the same year?

END

DATA HANDLING

SECTION A

1. Find the mean of 4, 3a + 1, a and 3
2. A box of tiles weighs 11.5kg, when the box of tiles is a half full of tiles, it weighs 6.5kg. Calculate the weight of tiles only
3. The average weight of four boys; Peter, Tom, John and Sam is 120kg, Peter is 100kg and Tom is 130kg heavy. Find the weight of John if Tom is as heavy as Sam.
4. The pie chart below shows how Okello spent his May salary of Sh.360,000. How much more does he spend on food than rent?

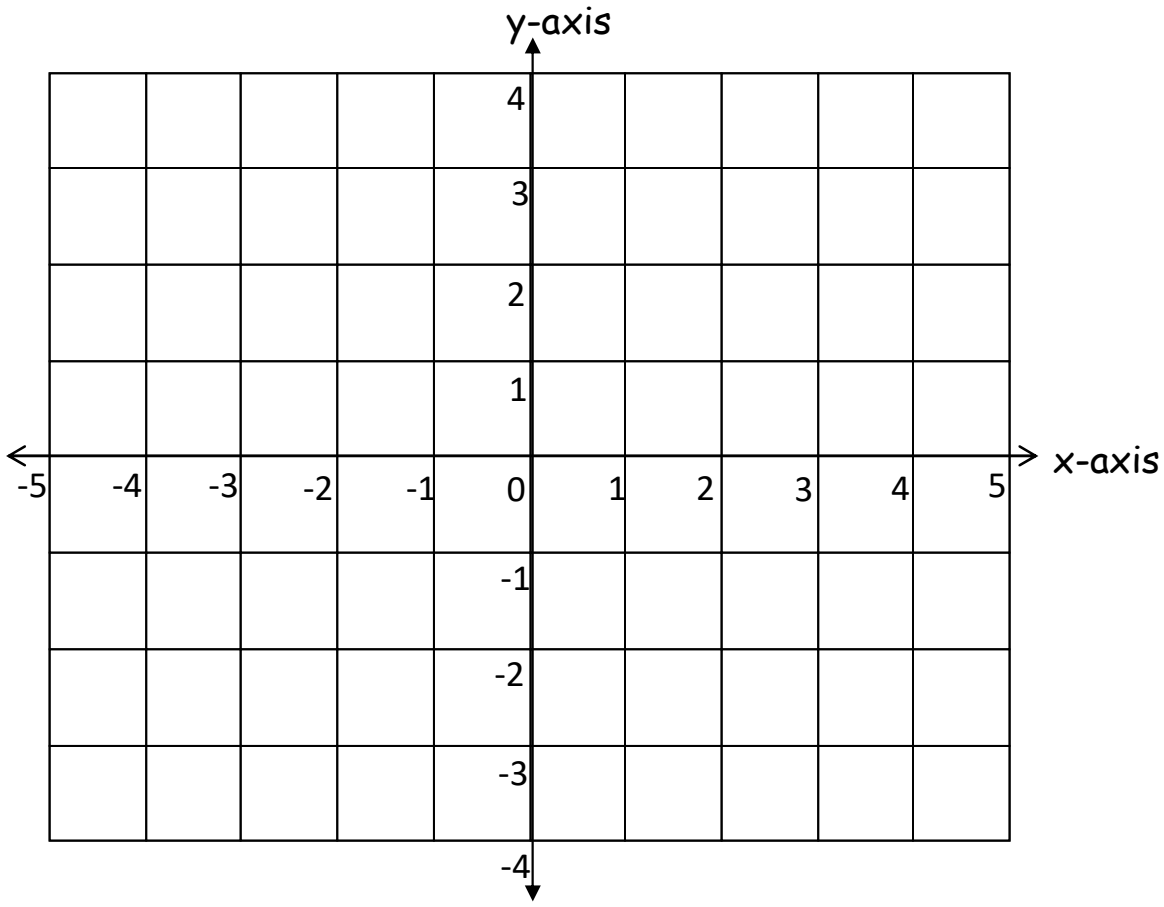


5. The mean height of 6 girls is 4metrws and the mean height of 3 girls is 4 metres. Find the mean height of all the girls
6. The following weights of eight men were recorded at a health centre. 54kg, 64kg, 50kg, 52kg, 40kg, 48kg, 80kg, and 35kg. Find the median weight of the men.
7. Study the table below and find the modal frequency

№ of pupils	1	3	2	1
Marks scored	30	15	25	10

8. The height of a policeman is 36cm. The average height of the policeman and three cooks is 40cm. Calculate the total heights of the cooks

9. On the graph below, plot (3, $^{-}$2)



10. The mean of 6, x + 2 and 4 is 5. Find the value of x

11. Given that ⊢ represents 8 chairs and each chair costs Sh. 12,000. Find the cost of buying chairs represented by ⊢ ⊢ ⊢

12. The average of 4 girls in is 10 years. A young girl of 5 years joined the group. Find the average age of the 3 girls.

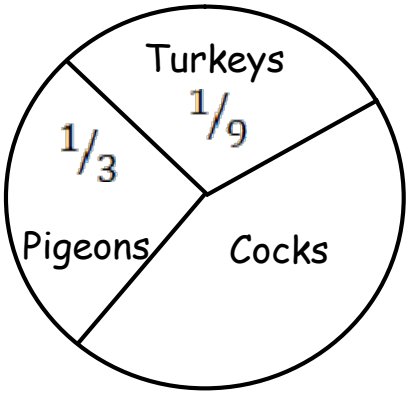
13. Given that the equation of the line L is y = x+2. Complete the table below.

X	0	1	2	-2	___	-4
y	2	___	4	0	-1	-2

14. The average age of 12 boys is 18 years. Find their total age

15. Workout the average of 3, 8, 2, and 7

16. The pie chart shows different kinds of birds kept to buy a farmer at Kiboko village. Study it and answer questions that follow.



If there are 150 cock kept, how many poultry birds does he have altogether.

SECTION B

17. The mean of 3, 5, 4, 7, 9, 5, and x is 5. Find;

    a) The value of x

    b) The media

    c) The mode

18. In a science mock exam given to class, the marks scored frequency and total marks scored are shown in the table below.

Marks scored	Frequency	Total marks
3	3	9
_____	10	50
6	_____	84
12	_____	36
9	9	81
40	5	_____

a) Complete the table

b) What was the mode?

c) How many pupils were in the class?

d) What was the average mark scored?

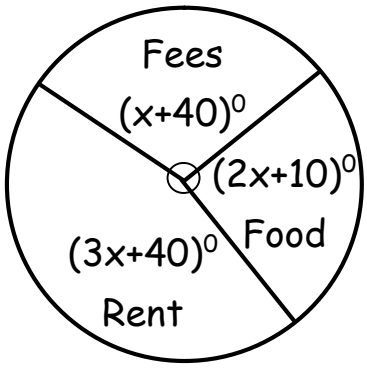
19. Given that y = 2x -1

a) Complete the table below

x	0	1	2	_____	4	5
y	-1	1	_____	5	_____	_____

b) Plot the given points on the graph

20. The pie chart below shows Mr. Owino's monthly expenditure



a) Calculate the value of x

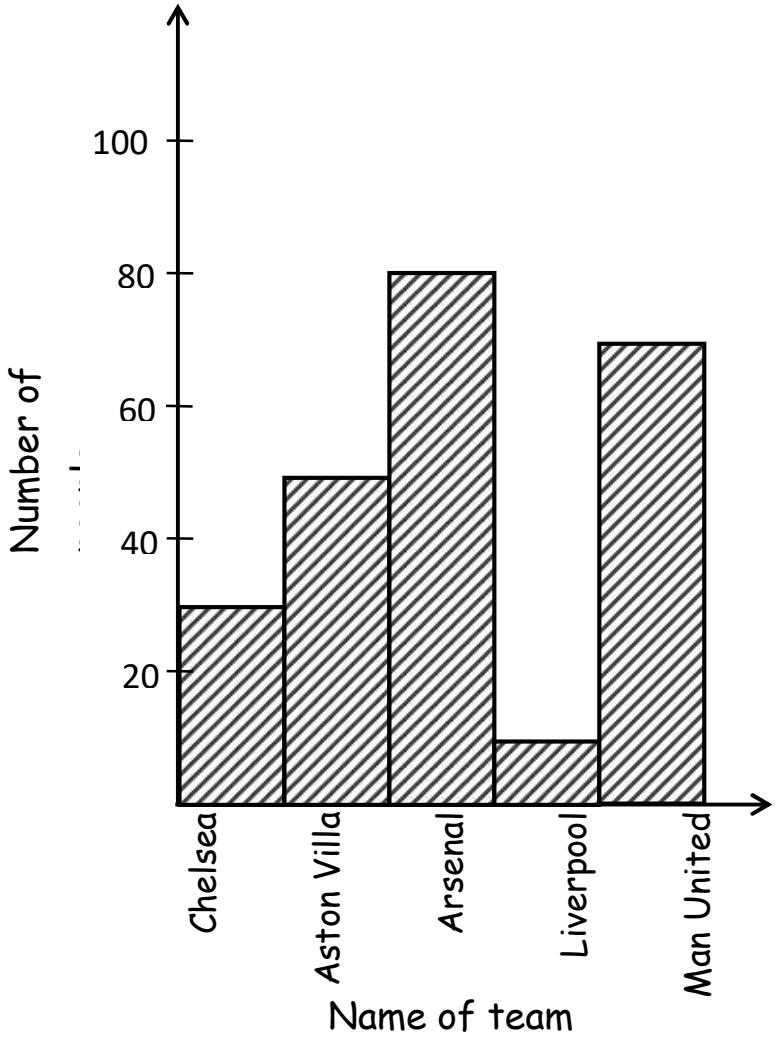
b) If he spends Sh. 680,000 on fees. How much does he earn?

21. In a class of 40 pupils, the mean score for a Mathematics paper was 82. The mean score for the last 30 pupils was 78.

a) What was the total score of the ten pupils?

b) The average of 7 numbers is 5. Six of the numbers are 3, 4, 2, 3, 8 and 9. What is the median of the seven numbers

22. The bar graph below represents the number of supports of different teams in premier league



a) How many people supported man united?

b) Which team had the greatest number of supporters?

c) What percentage of people supported Aston Villa?

d) If a supporter is picked at random, what is the probability that a supporter picked will support Chelsea

23. Mr. Ouma has the following number of animals on his farm

24 cows, 6 goats, 12 rabbits and 18 birds

Using a radius of 5cm, draw a pie chart representing the number of animals on Mr. Ouma's farm

24. The table below shows the mass of different pupils measured in a P.7 class

Mass (kg)	35	50	p	60
Number of pupils	8	3	4	3

a) How many pupils were measured?

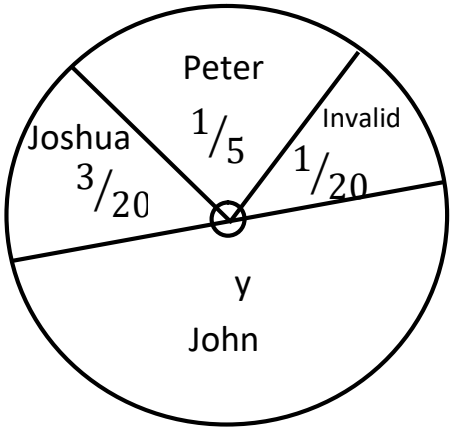
b) If their mean mass was 47, find the value of p

c) Find

i) Range

ii) Mode of the mass of the pupils

25. The pie chart below shows the results of election of three candidates conducted at Bumali Junior School expressed as fraction. Study and use it to answer questions that follow

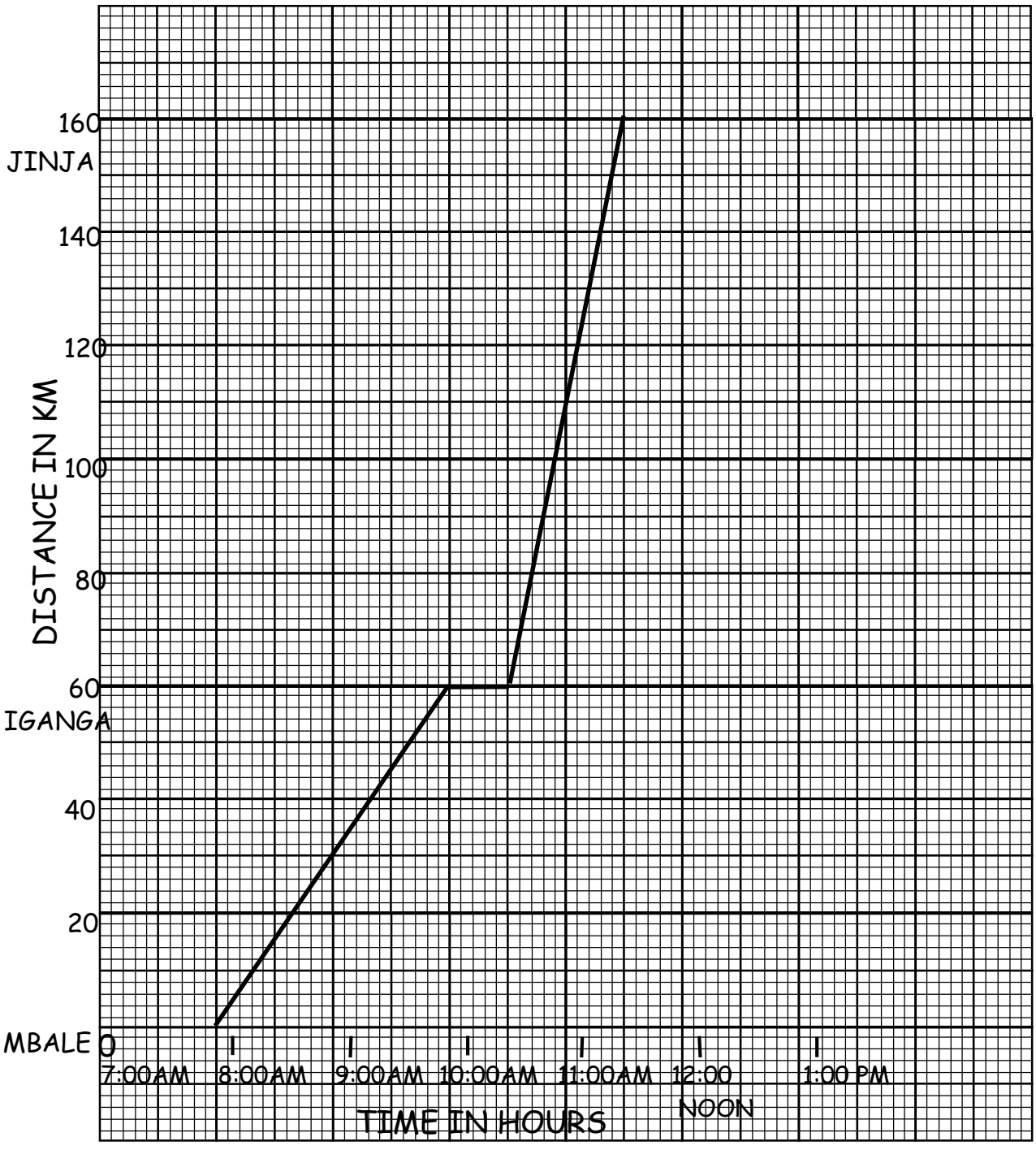


a) If John got 324 more votes than Joshua, how many invalid votes were counted

b) How many votes did peter get?

c) Who won the elections?

26. The graph below shows how Mukisa travelled from Mbale to Jinja through Iganga. Study it carefully and use it to answer questions that follow



a) At what time did Mukisa reach Jinja

b) For how long did he rest at Iganga?

c) Calculate the average speed for the whole journey.

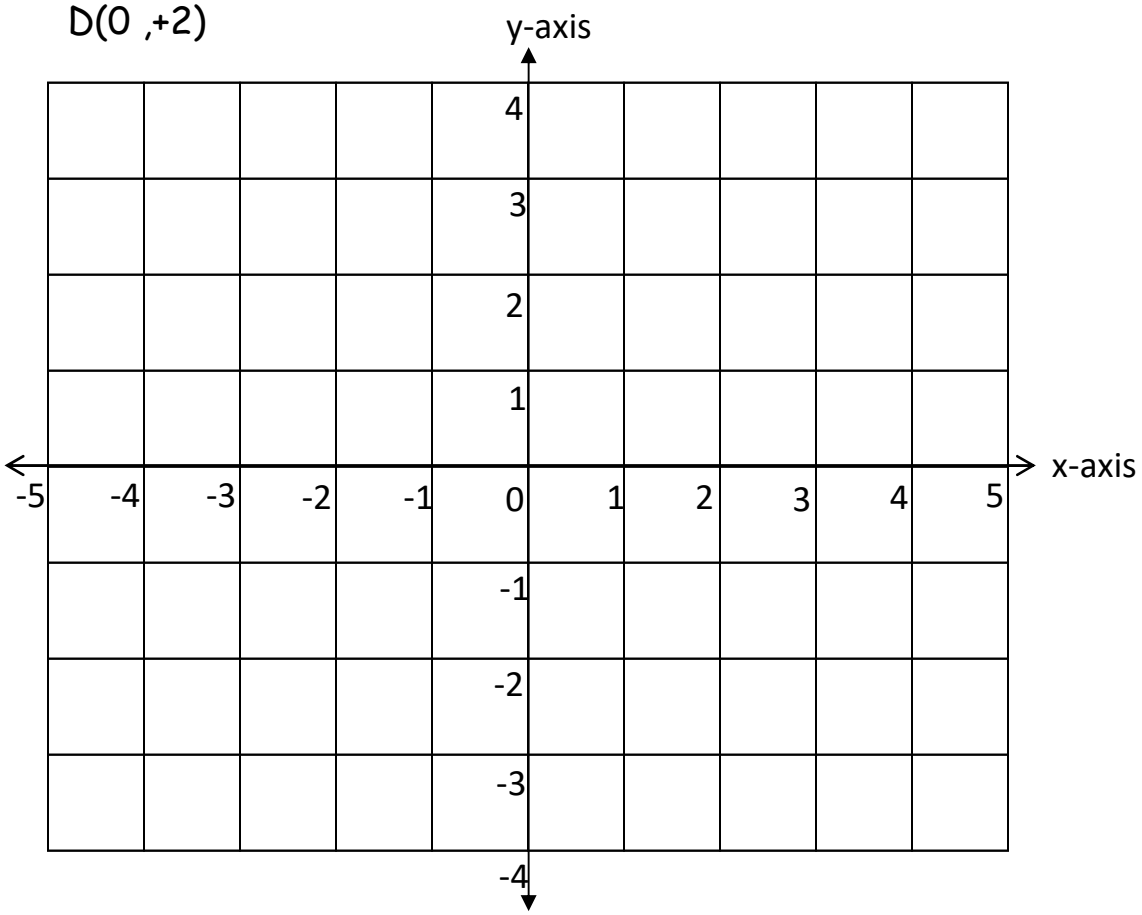
27. The average height of four men is 56m when two other men join the group, the average weight becomes 52m. The sixth man is 8m taller than the fifth man. Find the height of the sixth man

28. Wasike spent $^1/_3$ of his money on rent and saved $^1/_6$ of the remainder on food and saves the rest.

    a) What fraction of his money of his money was saved?

    b) Using a radius of 4cm. calculate a pie chart showing the information above

29. Plot the given points on the grid below: A(-2, -2), B(+4,-2), C(+4, +2), D(0 ,+2)



    a) Join the plots A to B to C to A.

    b) What special name is given to the figure formed?

30. A taxi driver left Tororo at 9:00am drove at 30km/h for 2 hours to Busia and drove for $1\frac{1}{2}$ at 40km/hr to Namayingo. He rested for half an hour at Namayingo. He then left Namayingo and drove back to Tororo at 80km/hr.

    a) Represent taxi driver's journey on the graph below

    b) Calculate his average speed for the whole journey

PROBABILITY

1. The probability of P.7 pupils passing Mock Examination is 0.6. what is the probability that they will fall?
2. A bag contains 6 blue and 4 red pens. What is the probability of picking a red pen from the bag at random?
3. The probability that Jane will pass the examination is $^5/_6$. What is the probability of failing the examination?
4. In a box, there are 15 balls. Out of these 4 are white and the rest black. What is the probability that a ball picked at random from the box is black?
5. In a stationary there are 192 books. The probability that a book picked at random from the stationery is written by MK publisher is $^5/_8$, how many books are not written by MK publishers.
6. A bag contains 20 oranges, 10 are ripe, 7 are raw and rest are rotten. An orange is picked at random from the bag. Find the probability that an orange picked at random is a rotten one.
7. A tetrahedral dice is tossed once. What is the probability that an even number will appear on top?
8. Given the numbers

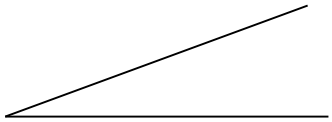
1	2	3	4	5	6	7	8

   What is the probability that a multiple of 3 will show up?
9. A dice is tossed once, what is the probability that an even number will show up

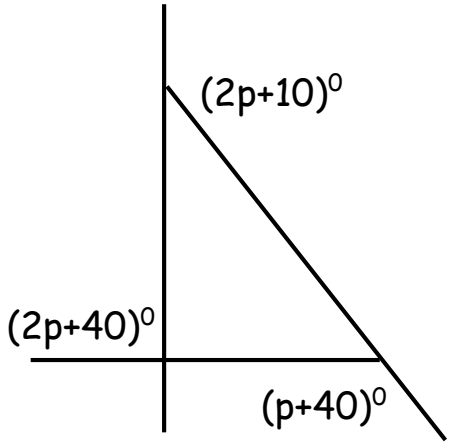
END

SECTION A

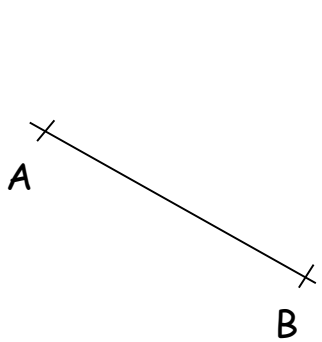
1. Bisect the angle below using a ruler and a pair of compasses only



2. In the diagram below, find the value of p

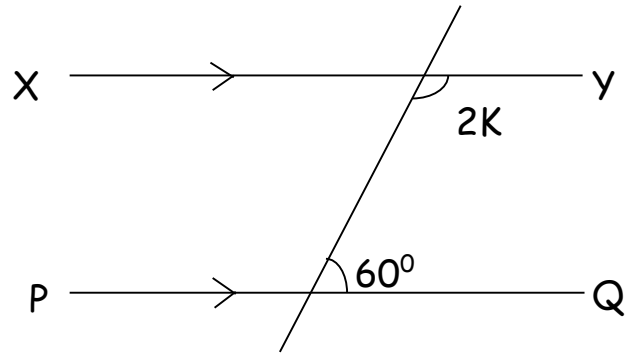


3. What angle is $^{2}/_{3}$ of its complement.
4. How many sides has a polygon whose interior angle is 120^0?
5. The bearing of K from L is 088^0. Find the bearing of L from K
6. Using a pair of compasses, a ruler and a pencil, drop a perpendicular line from X to meet AB at P

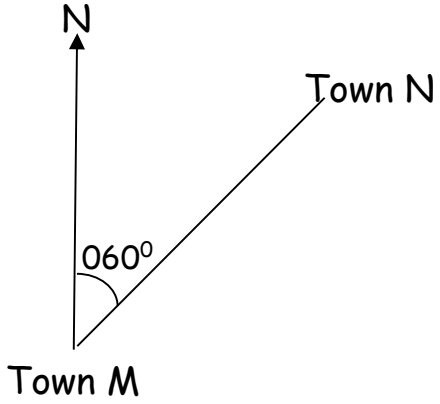


7. A regular polygon has 16 right angles. How many sides has the polygon?
8. What angle is $^{1}/_{5}$ of its supplement?

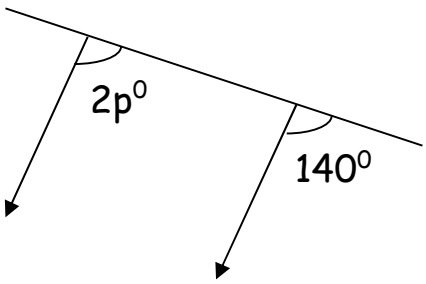
9. In the figure below XY is parallel to PQ. Calculate the value of K in degrees



10. What is the bearing of town M from town N in the diagram below?



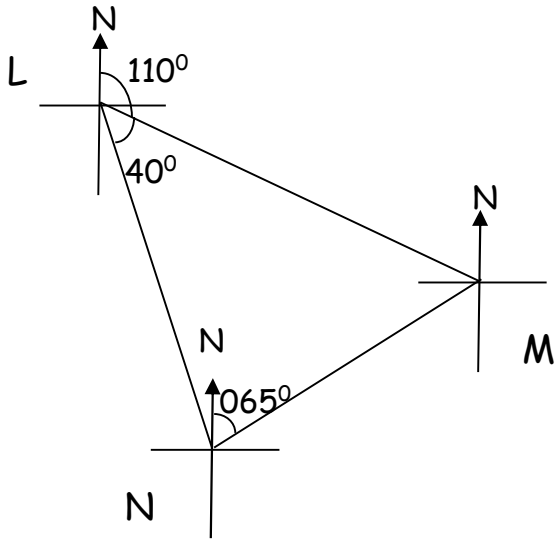
11. The distance between two villages on a map is 4.5cm. Find the actual distance on the ground in km if the scale is 1: 100,000
12. How many revolutions make up 1800^0?
13. Using a ruler, a pencil and a pair of compasses only. Construct an angle of 75^0 in the space provided.
14. Find the value of p^0 in the diagram below



15. A regular polygon has 9 sides. Calculate the interior angle sum.

16. Calculate the number of sides of a regular polygon with 6 triangles formed in it

17. Study the diagram below and use it to answer questions that follow

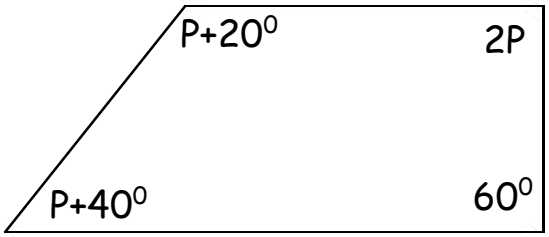


a) What is the direction of;

i) N from M

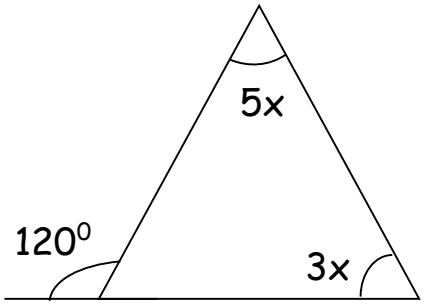
ii) M from L

18. Find the value of p in diagram below



19. Using a ruler, a sharp pencil and a pair of compasses only, draw the supplement of 110^0 in the space below

20. In the figure, find the value of x

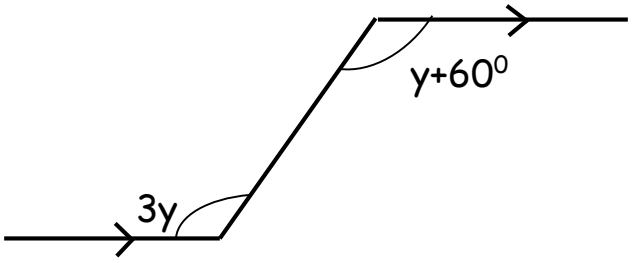


SECTION B

21. Peter and Tom walked from the same point O. peter walked 50metres westwards to point P and Tom walked 50meters southwards to point Q.
    a) sketch a diagram to show the above information
    b) Draw an accurate diagram to show the movement of the two boys. (use a scale of 1cm represent 10metres)

22. Using a ruler, a pencil and a pair of compasses only.
    a) Construct a trapezium PQRS with PS = 6cm, angle PQR = 90^0 and PQ is parallel to RS
    b) Measure length RQ _____cm

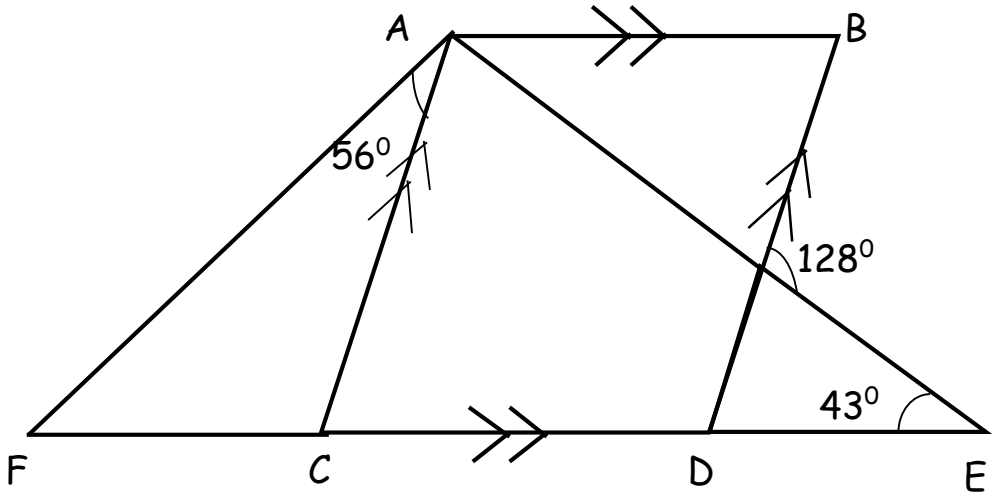
23. a) The interior angle of regular polygon is 20% more than the exterior angle. Calculate the number of sides of the polygon
    b) Find the size of angle y in the diagram.



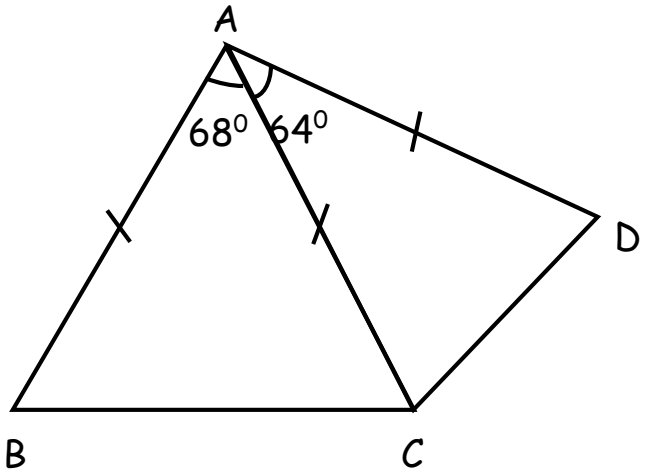
24. Using a pair of compasses, a pencil and a ruler only;
a) Construct triangle PQR where PQ = 8cm, and angle PQR = 45^0 and angle QRP = 60^0. Drop a perpendicular from R to meet PQ at point K.
b) Measure RK _____

25. In the figure below ABCD is a parallelogram angle GED = 43^0, BGE = 120^0 and FAC = 56^0

a) What is the size of angle CFA?



b)In the figure below, line AB =AC=AD angle CAD=64^0 and BAC=68^0



What is the size of angle BCD?

26. A church is 70 metres east of the mosque. The school is 60 metres from the church on a bearing of 240^0.

a) Using a scale of 1cm to represent 10 metres, show the three places on an accurate diagram.

b) Find the shortest distance between the mosque and the school

27. The interior angle and exterior angle of a polygon are in the ratio of 5:1
    i) Find the size of each exterior angle and interior angle of the polygon
    ii) What is the number of sides of the polygon?

28. a) Using a ruler, a pencil and a pair of a compasses only, construct a regular octagon using a radius of 3cm
    b) A teacher was facing north-east and then turned anti-clock wise to face south-west. Through what angle did he turn

29. School A is 40km North East of school B and school C is 50km south East of B
    a) Draw a sketch to show the Position of the three schools
    b) If the scale of 1cm represent 10km, draw an accurate diagram to show the position of the schools
    c) Use the scale drawing to find the bearing of
        i) School B from A
        ii) School B from C
        iii) School C from A
    d) Use the scale draw to find the shortest distance between A and school C

30. The interior angle sum of a regular polygon is 1800^0
    a) Calculate the number of sides of the polygon
    b) Find the size of each exterior angle of the polygon

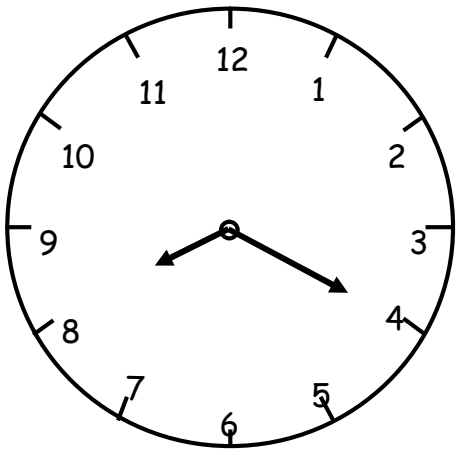
31. Using a pair of compasses, a ruler and a pencil only
    a) Construct a triangle ABC in which BC = 8cm, angle ABC = 90^0 and BCA = 30^0
    b) What is the area of triangle ABC?

END

TIME

SECTION A

1. Convert 1435 hours to 12-hour clock system
2. Express 5m/s to km/hr
3. Dominic slept at 8:16pm and woke up at 6:30am. For how long was he asleep?
4. Convert $2\frac{1}{3}$ to minutes
5. A cyclist travelling at a speed of 60km/hr took $1\frac{1}{2}$ hours to complete his journey. Calculate the distance covered.
6. Convert 9:32pm to 24-hour clock system
7. A watch loses 5 seconds every hour. If it was set correctly on Tuesday at 8:00am. What time will it show the following Friday at 8:00pm
8. A car at a speed of 50km/hr for 2 hours. How far did it go?
9. A forty-minute lesson started at 11:40a.m. At what time did it end?
10. What is the morning time shown on the clock face below?



11. An interview started at 1800hours and ended at 11:00pm. How long did it last?

12. A taxi left Mbale at 1500hours and arrived at Kampala at 1555hours. How long did the taxi take?
13. The time is 30 minutes past midnight. Express this time in 24-hour clock
14. Akello travelled from home to church at a speed of 120km/hr which is a distance of 160km. how long did she take to reach the church?
15. A bus takes $2\frac{1}{2}$ hours to travel from Busia to Jinja with a speed of 80km/hr. how far is Jinja from Busia

SECTION B

16. A car takes 2hrs to cover a certain journey at 160km/hr but it takes only 3 hrs to return through the same distance
    a. Calculate the total distance covered for the whole journey
    b. Workout its average speed for the whole journey

17. John drove his car at a speed of 80km/hr from town A to town B between 9:45a.m and 12:30pm. He rested for 15 minutes and continued to town C covering 90km at a speed of 45km/hr
    a) How far is town C from A
    b) Workout the John's average speed for the whole journey

18. Wanyonyi drove from town A to B at an average speed of 75km/hr. On the return journey, he drove at an average speed of 60km/hr. If the total time taken was $1\frac{1}{2}$ hours, how far is town A from town B.

19. The time table below shows the arrival time and departure time of a bus travelling from town A to town D

TOWN	ARRIVAL	DEPARTURE
A		8:30am
B	9:10am	11:40am
C	12:30pm	1:50pm
D	2:00pm	

a) At what time did the bus arrive at town B

b) How long did the bus take to travel from town B to C?

c) If the distance from town A to D is 121km, find the average speed of the bus for the whole journey

20. A motorist left town P travelling at a speed of 60km/hr for $1\frac{1}{2}$ hour to town Q. He rested for 60minutes and continued to town K at a speed of 52km/hr for $2\frac{1}{2}$ hrs

a) Find the distance between town P and k

b) Workout the motorist average speed for the whole journey

21. Kato left Jinja town at 4:40pm. He drove his car at a steady speed of 80km/hr for $4\frac{1}{2}$ hours from Jinja town to his home.

a) At what time did he reach his home?

b) If the cost of petrol was Sh. 6,000 per litre and he used one litre of petrol to cover 4km. Find the cost of the petrol for the journey from town to his home.

22. Convert 90km/hr to m/sec

    b) Maputu takes 45minutes to drive from home to school a distance of 30km. calculate Maputu's speed in km/hr

23. The time table below shows the journey of Akamba bus from Busia to Kampala through Namayingo, Mayuge, Jinja and Mukono. Study the table and use it to answer the questions that follow

TOWN	ARRIVAL TIME	DEPARTURE TIME
Busia		0900 hours
Namayingo	0930 hours	0945hours
Mayuge	1025 hours	1030hours
Jinja	1150 hours	1200hours
Mukono	1330 hours	1340hours
Kampala	1430 hours	

a) Convert the arrival time of the bus at Namayingo into 12-hour clock system.

b) How long did the bus take to travel from Mukono to Kampala?

c) The distance from Busia to Kampala is 275km. Calculate the average speed of the bus for the whole journey

END

MONEY

1. a) Mugisha sells 30 hens at Sh. 12,000. How much money does he get when he sells 25 hens?

   b) Moses withdrew twenty thousand shilling notes numbered consecutively from AP 342592 to AP 342641. How much money did he withdraw?

2. A wholesaler sold an article at Ug Sh. 32000 to a retailer making a profit of Ug Sh. 2800. A retailer sold the article to a customer at a loss of Ug Sh. 1700. Calculate the amount paid by the customer.

3. A milk seller has 36 litres of milk. He sells milk using a container measuring, 6cm by 10cm by 4cm at Sh.500 per full container. How much money does he get after selling the milk?

4. a) Amito paid US dollar 45 for a pair of shoes after being given a discount of Sh. 57,750. What was the original price of shoes in Uganda shillings if 1 US dollar costs Ug Sh. 3,850?

   b) By selling a dress for Sh. 45,000, a seller gains Sh. 5,000. Calculate the cost price of the dress.

5. At a forex Bureau, 1 Us dollar costs Ug Sh. 2,800

   a) How much Ugandan shillings will a tourist who has Us dollars 600 get?

   b) If a business man had Ug Sh. 630,000. How much US dollar will he get at the same exchange rate?

6. John bought receipt book numbered 634201 to 634300 to be sold to anybody who would attend the school music concert. Each receipt was sold at sh.5000 for whoever enters the concert. If all the receipts were sold

   a) How much people attended the concert?

   b) How much money was collected for the concert?

7. A total collection of the school fees by a school bursar on the opening day of term two is shown in the table below.

   a) Complete the table

Value of notes (Denomination) in Ug Sh.	Number of notes	Amount in Sh.
2,000	20	40,000
5,000	6	_____
10,000	_____	30,000
_____	4	80,000
50,000	10	_____

   b) Find the total number of notes the school bursar collected

8. To bake 100 pancakes for sale, Kato has to buy the following items

   i) $3\frac{1}{2}$ litres of cooking oil at Sh. 6,000 per litre.

   ii) 2 packets of wheat flour at Sh. 5,500 per packet

   iii) 3 tins of charcoal at Sh. 5000 per tin

   iv) Spices for Sh. 3,000

If Kato sold all the pancake at Sh. 700 each. Calculate his percentage profit.

9. Natecho bought three 50kg bags of sugar at Ug Sh. 150,000 each bag. Find the cost price of the 3 bags of sugar

   b) At what price per kg must she sell the sugar in order to make a profit of Ug Sh. 135,000

10. Study the exchange rates below at NANO forex Bureau

Currency	Buying price	Selling price
1 us dollar	Ug Sh. 3900	Ug Sh. 3950
1 pound sterling	Ug Sh. 4800	Ug Sh. 4900
1 Rwandese francs	Ug Sh. 5	Ug Sh. 8

   a) A lady had Ug Sh. 1078,000. How many pound sterlings did she get?

   b) A tourist came with 120 US dollars and 500 Rwandese francs. How much money in Uganda shillings did the tourist have altogether?

11. Mr. Ekungu bought items as shown in the table below

Item	Quantity	Unit Cost	Total Cost
Posho	2kg	Sh. 4200	Sh. _____
Sugar	$1\frac{1}{2}$kg	Sh. _____	Sh. 4800
Meat	_____	Sh. 12,000	Sh. 24,000
TOTAL EXPENDITURE			Sh. _____

   a) Complete the table

b) If he was given a change of sh. 2800. How much money did he have at first?

12. Allen went to the market and bought the following items
    4 bottles of 500ml of mineral water at sh 2500 each
    500g of sugar at sh. 9,000 for every $1\frac{1}{2}$kg
    3 sachets of cooking oil at sh. 3,500 each 7 sachets
    a) How much did he pay altogether for the item he bought?
    b) If he went with Ug Sh. 20,000 and was given a discount of 10%. How much did he go back with?

13. Maputo bought 20 apples at sh. 2,000 each but y of them got spoilt. He sold the remaining apples at sh. 3,000 each and made a profit of Sh. 8,000. Calculate the value of y

14. The table below shows the transport fare for Easter charged to 45 passenger travelling to different area along Busia- Jinja high way by Gateway bus

ROUTE	TRANSPORT
Busia to Bustema	Sh. 5,000
Busia to Bugiri	Sh. 7,000
Busia to Bulanga	Sh. 10,000
Busia to Iganga	Sh. 12,000
Busia to Jinja	Sh., 15,000

    a) If 5 passengers got at Bustema, 12 got out at Bugiri and 5 boarded going to Jinja, and then 15 got out when they reached Bulanga. How much money was collected by the bus from Busia to Jinja

b) How much passengers reached Jinja city?

c) How much was the head teacher supposed to pay, if he travelled with 6 students from Busia to Iganga?

15. Jumbo, Tendo and Mambo contributed Sh. 24,000, Sh. 36,000 and sh 24,000, sh 36,000 and sh 60,000 respectively for a joint business which made a profit of sh 51,000 by the end of the business. They then agreed to separate and each of them starts his own and they shared the total money according to their initial contribution
How much did each person get?

16. a) The cost of a gross of books is Sh. 72,000, find the cost of 47 similar books
b) Amongo bought 500 books at Sh. 700 each. She then sold 100 of the books at Sh. 900 each and the rest at Sh. 800 each. Calculate the profit Amongo made.

17. The exchange rate at Nile forex Bureau is as follows
1 US dollar ($) = Ug. Sh 3,400
1 British pound sterling (£) = Ug sh. 4,600
1 Kenya Shillings(Ksh) = Ug sh.35
a) Amin had Ug sh. 1,840,000. How much money in British pound sterling did she have?
b) If a phone costs $700. Find the equivalent cost of the phone in Kenyan shillings

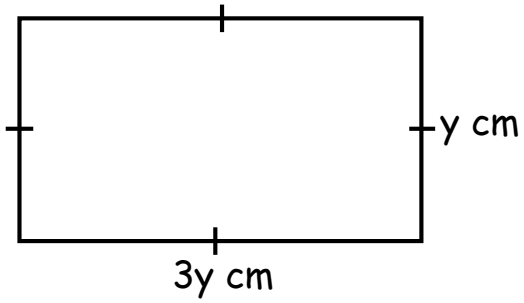
18. Apio went to the market and bought the following items
3 litres of cooking oil at Sh. 2,400 per litre
250g of sugar at Sh. 2,000 per kg
18 tomatoes at Sh. 1,500 for every 6 tomatoes.
a) Calculate the total cost of the item
b) Apio paid Sh. 12,000 for the items. What discount was she paid?

END

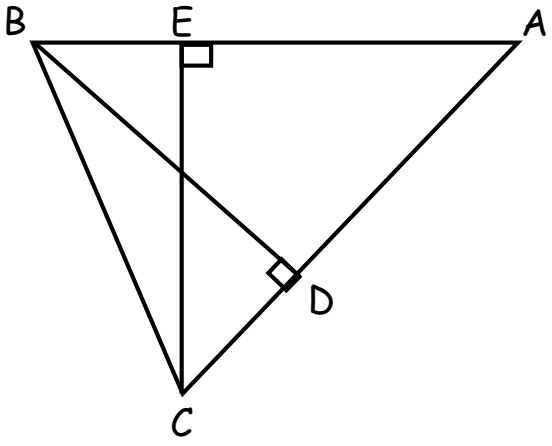
MASS, LENGTH AND CAPACITY

SECTION A

1. The area of the rectangle below is $75cm^2$. Find the value of y

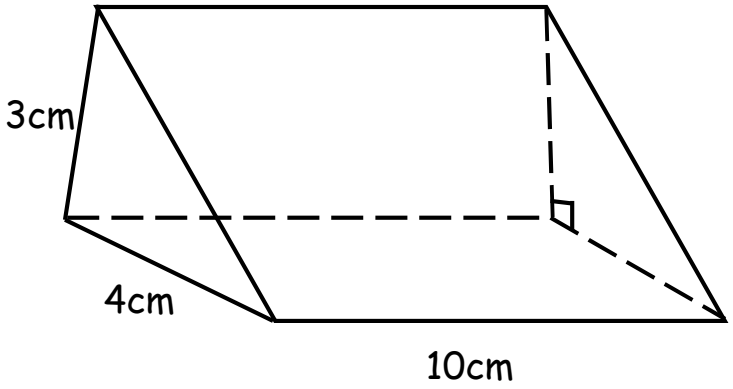


2. In the triangle below, AB = 8cm, CE = 6cm and AC = 12cm. Find the length of BD

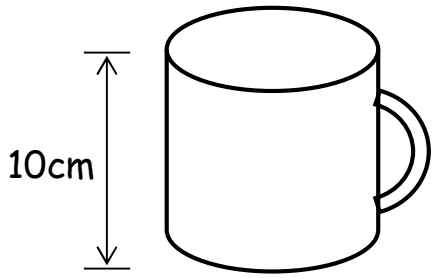


3. Convert 2500metres to kilometers
4. The area of a kite is $80cm^2$.one of its diagonals is 20cm. find the length of the second diagonal
5. A wheel made 1000 revolutions and covered a distance of 66om. What was the diameter of the wheel in cm ($\pi = \frac{22}{7}$)

6. A school planted trees on both sides of the road leading to the school. The road was 450m long. How many trees were planted altogether?
7. The capacity of a water tank is 72litres. Calculate its volume in cm^3
8. Express $5400m^2$ as hectares
9. Workout the circumference of a semi-circle whose diameter is 14cm. use π as $\frac{22}{7}$
10. Calculate the volume of the figure below



11. Matiiko prepared 4.5 litres of milk and served it to the people at the polling station using the cup with a base of area of $9cm^2$ as shown below



How many people did he serve at the polling station?

12. 30 squares each of equal length are packed in a rectangle measuring 30cm by 18cm. if the squares cover all the space in the rectangle. Find the length of each square
13. A Kite has its longer diagonal 48cm and shorter diagonal 12cm. Calculate its area.

14. A packet of Nomi weighs 200 grams. Calculate the total weight in kilograms of 30 packets of Nomi.

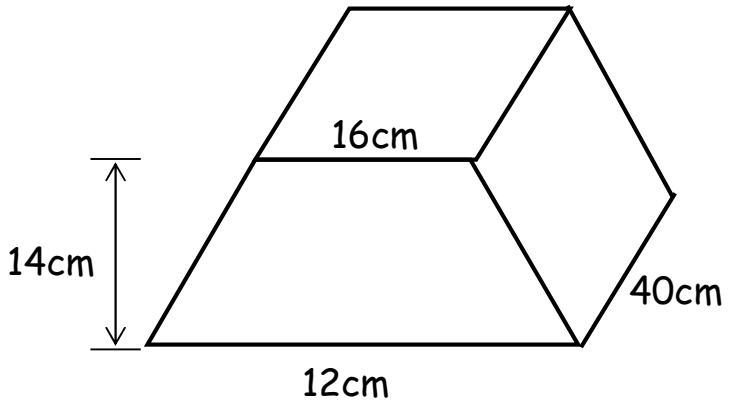
15. A tank was $\frac{3}{4}$ full of petrol. When 4 litres were removed, it became $\frac{1}{2}$ full of petrol. What is the capacity of the tank?

16. At Mukembo's farm, eggs are packed into boxes which holds 144eggs. How many boxes of the same size are need to pack 1,008 eggs?

17. The wheel of a car has diameter of 140cm. Find the distance it covers in two complete revolutions (use $\pi = \frac{22}{7}$)

18. Trees were planted a long a straight line 300metres long. If the trees were planted 10metres a part. How many trees were planted along the road?

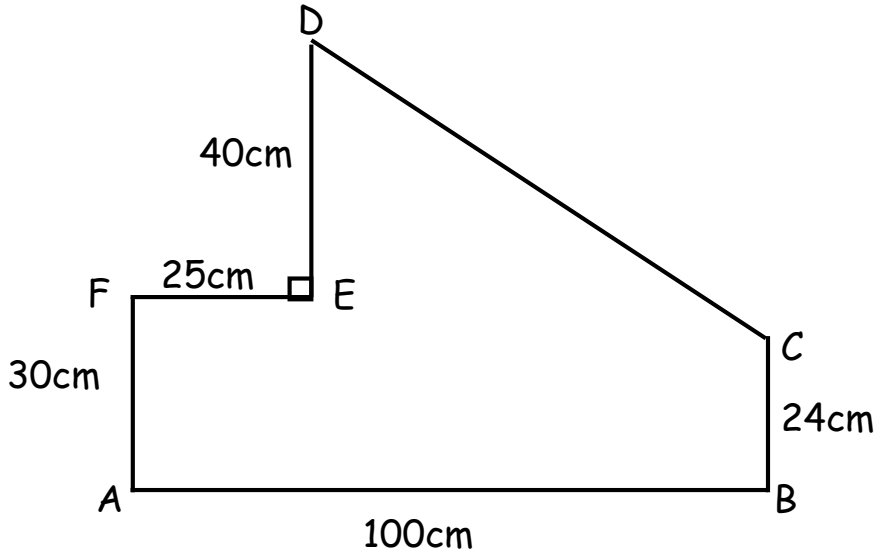
19. Calculate the volume of the trapezoidal prism below



20. The perimeter of the rectangular field is 42m. if its width is 6m. What is the area of the field?

SECTION B

21. Study the figure below and answer questions that follow

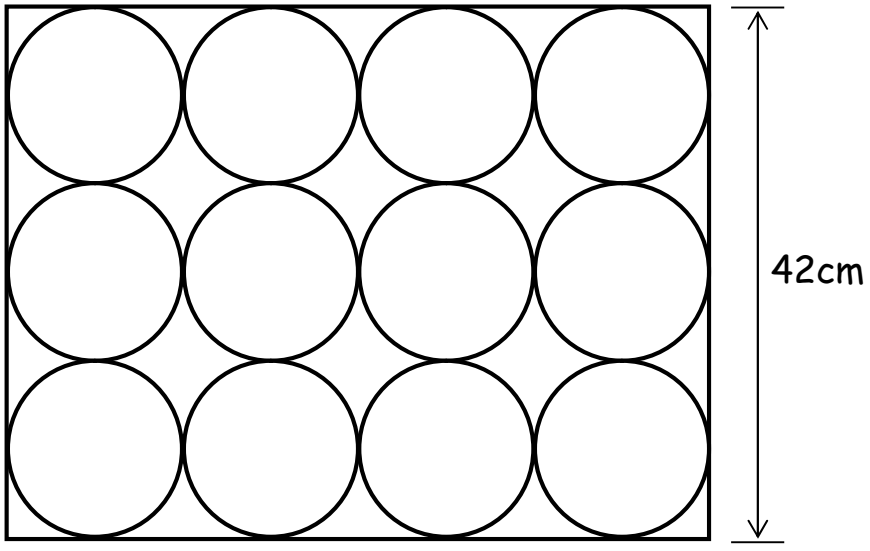


a) Find the length of DC

b) Find the perimeter

c) Find the area of the figure

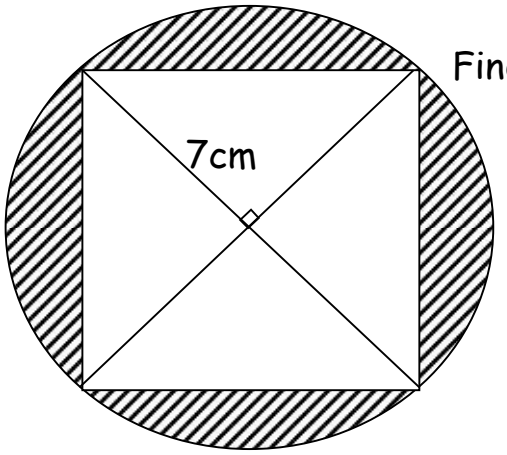
22. Tonny cut out circular cards from a rectangular manila paper whose width is 42cm as shown in the diagram below. Study the diagram and answer the question that follow



a) Find the length of the manila paper

b) Calculate the area of the pieces of the manila paper that remained

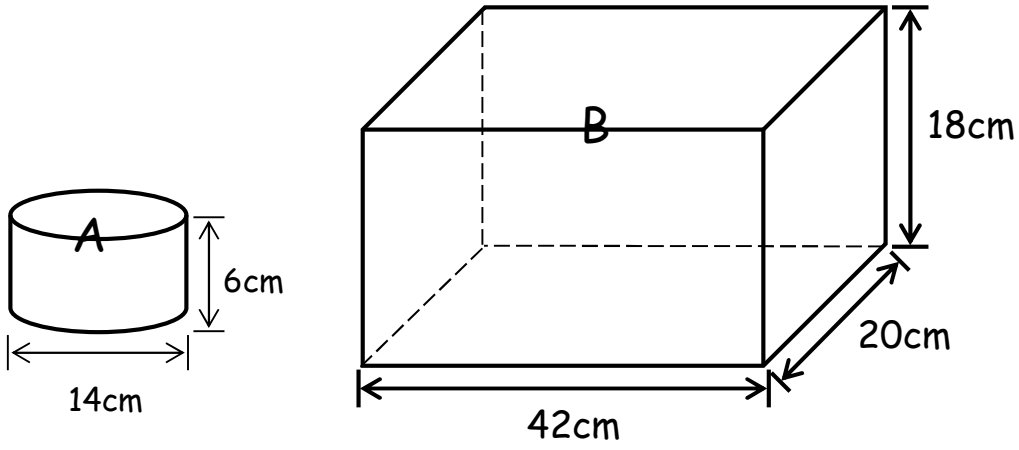
23. a) Study the figure below and answer the question that follows



Find the area of the shaded part

b) How many fencing pasts spaced 10m a part are required to fence a plot measuring 740m by 235m?

24. The cylindrical tins (A) are to be packed into the box (B) as shown below

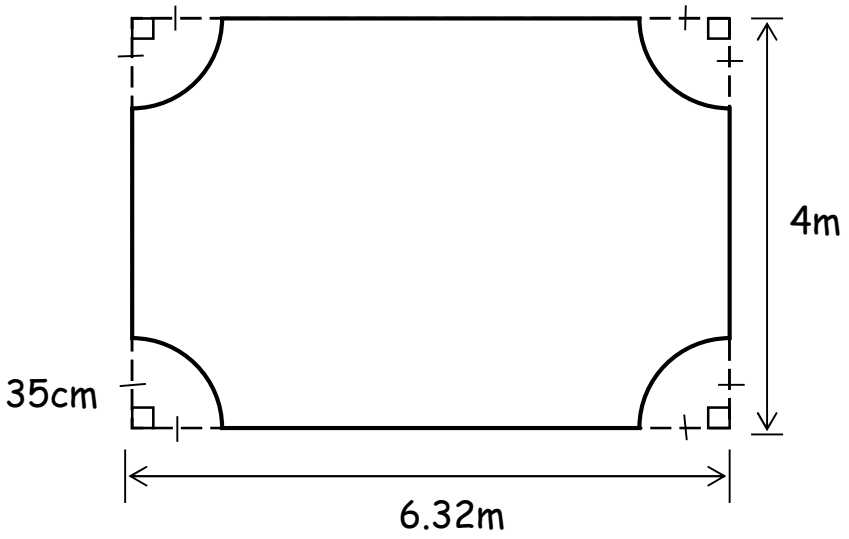


a) How many tins can be packed in the 1st year?

b) How many layers can be packed in the tins?

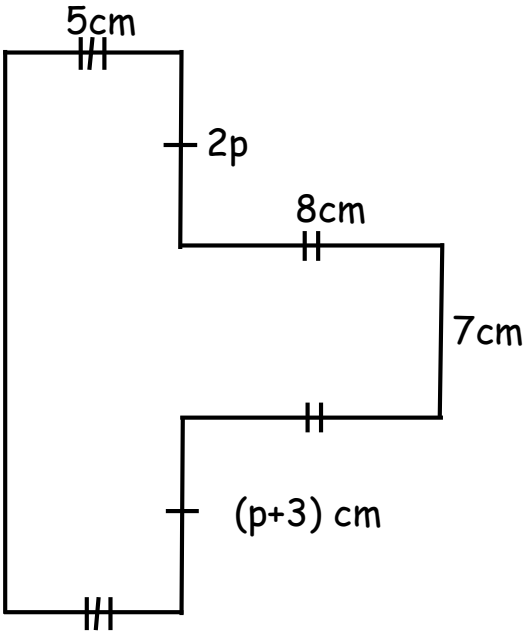
c) Find the volume of the space not provided after packing the tins into the box

25. The diagram below shows how the top of a dining table was designed. The part shown by the dotted lines is not part of the table. Study it carefully and use it to answer the question that follows.



Find the area of the dining table.

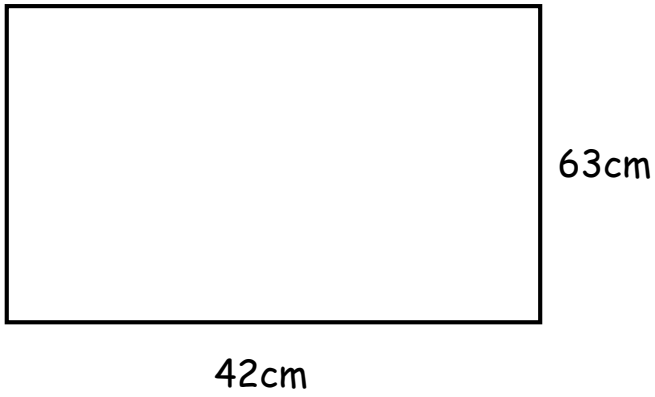
26. Study the joined shaped below to answer the questions that follow



a) Workout the value of p

b) Calculate the area of the joined shape

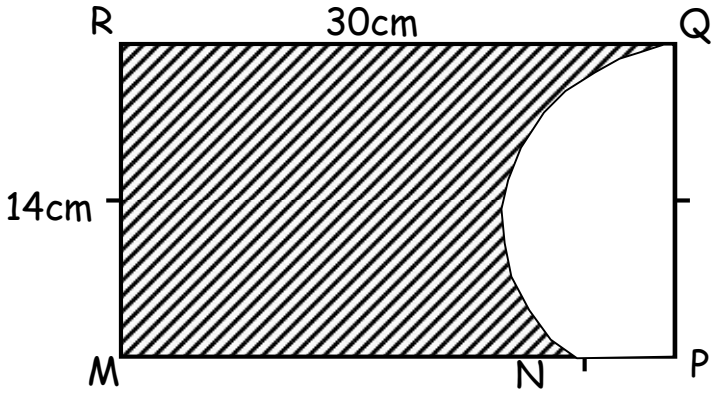
27. Isima kneaded a rectangular piece of dough of length 42cm and width 63cm shown below to cut out circular pancake



a) If he cut 6 pancakes along the length and 9 pancakes of the same size along the width. Find the circumference of one of the circular pancakes he cut out.

b) Calculate the area of the unused piece of dough after Isima cut out all the pancake.

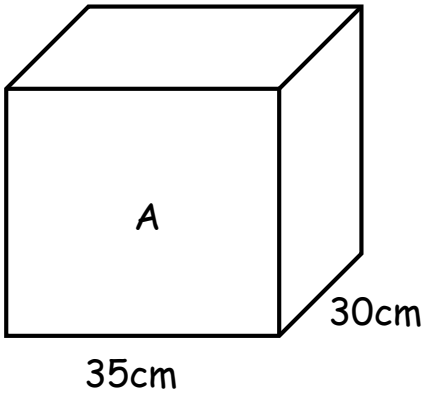
28. Study the figure below and answer the questions that follow

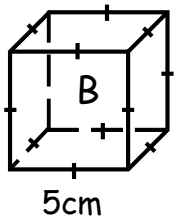


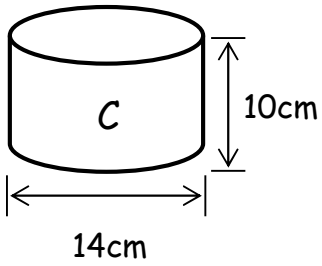
a) Find the area of the shaded part MNQR

b) Workout the perimeter of MNQRM

29. Study the diagrams below and use them to answer the questions that follow





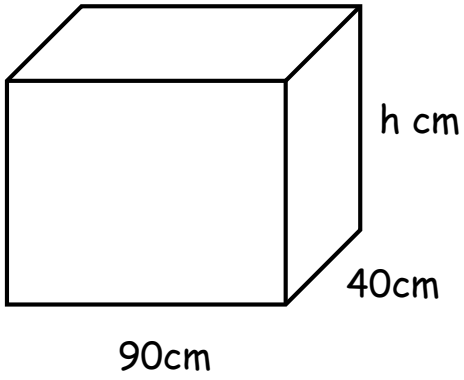


a) How many layers of tins C, can be filled in prism A?

b) Find the number of cubes that can be packed in prism A

c) Calculate the volume of the space left after packing cup fuels of tin (C) in prism A (Take $\pi = \frac{22}{7}$)

30. The volume of the box below is $18000cm^3$



a) Find its height.

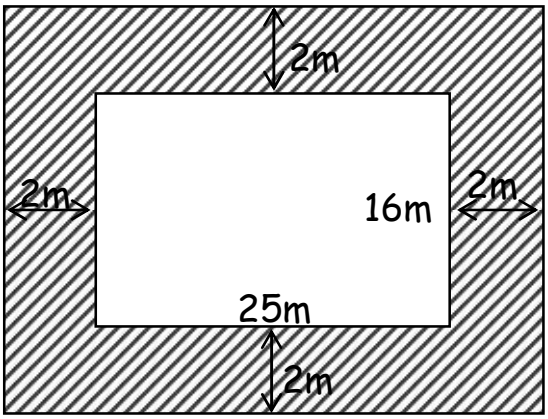
b) Find its total surface area.

31. When sprinting, Peter athlete covers 90cm with every stride

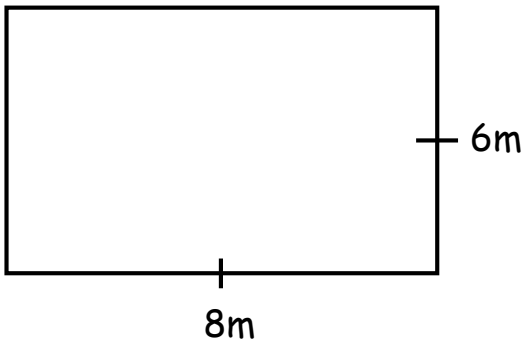
a) How many strides does he take to finish 100m?

b) How far does he run in 400 strides?

32. Find the area of the shaded part in the figure below



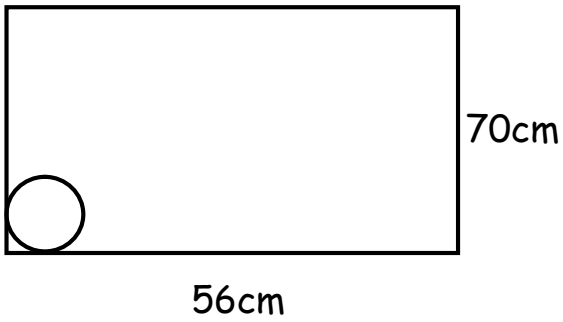
33. The diagram below shows Muka's rectangular room. Use it to answer the questions that follow



a) If he fixed square tiles of area $20cm^2$ each on floor of the room, find the number of tiles needed to cover the floor of the room.

b) If a box of 25tiles costs 50,000. How much will he spend on the purchase of the tiles

34. Amina cut out circular cards of diameter 14cm from a rectangular chart of length 56cm and width 70cm as shown below

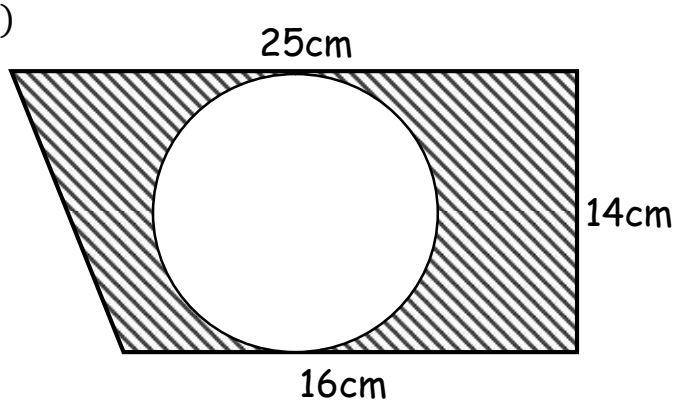


a) How many circular cards did she cut out from the rectangular chart?

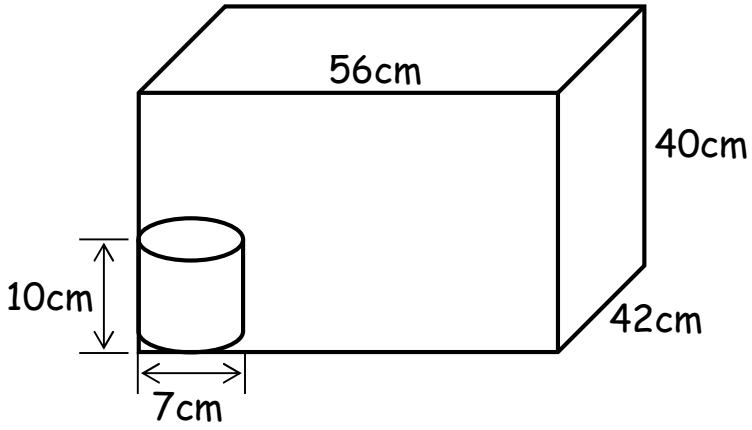
b) Find the area of the unused chart after cutting

35. Calculate the area of the shaded part in the diagram below

(Use $\pi = \frac{22}{7}$)



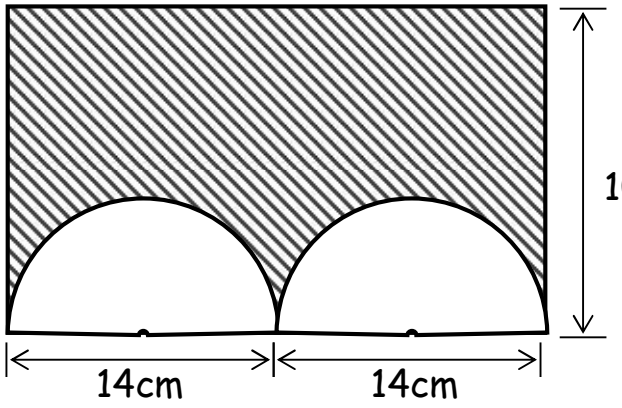
36. Tins of Nomi were packed in the box as shown below



a) How many tins were packed in the box altogether?

b) Calculate the volume of the space that was left after packing

37. The figure below is made up of two semi- circles



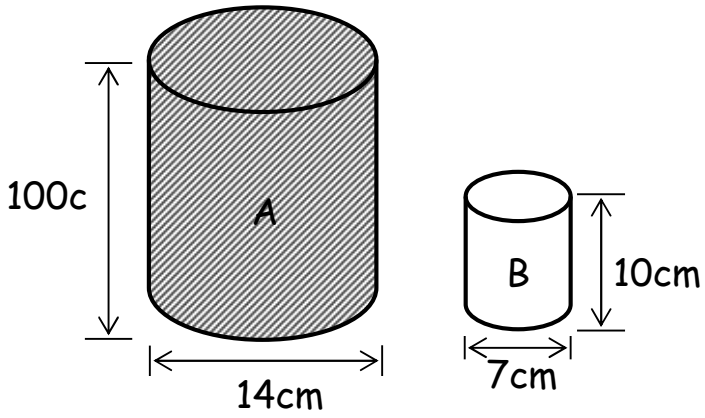
Calculate the area of the shaded part

38. Mpaata rides a distance of 2.97km from his home to school on a bicycle. The wheel of the bicycle has a diameter of 42cm

a) How many revolutions does the wheel make to cover the distance? (Take $\pi = \frac{22}{7}$)

b) If Mpaata makes 50 revolutions in one minute, how long does he take to reach the school?

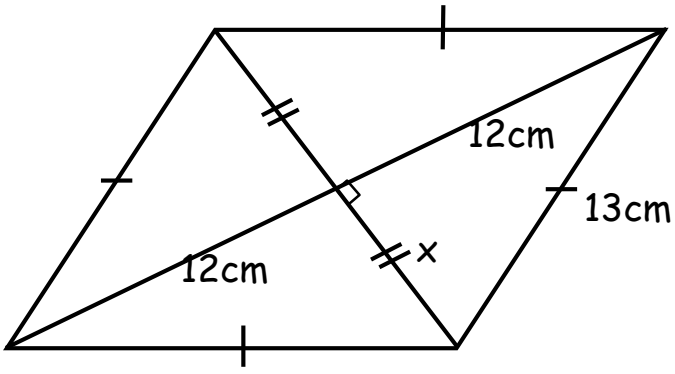
39. Bettrice filled container A below with milk. She served visitors with milk using cups of size B as shown in the diagram



a) Find the total number of full cups of milk she served the visitors

b) If each visitor drank four cups, how many visitors attended the ceremony?

40. Study the rhombus below and use it to answer questions that follow

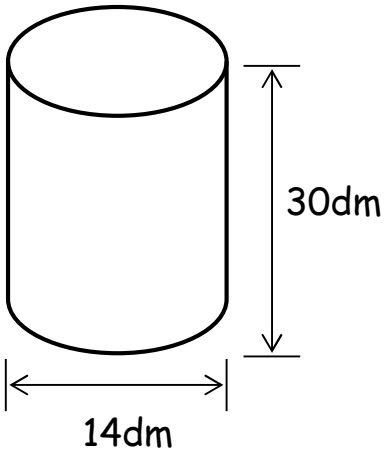


a) Find the value of x

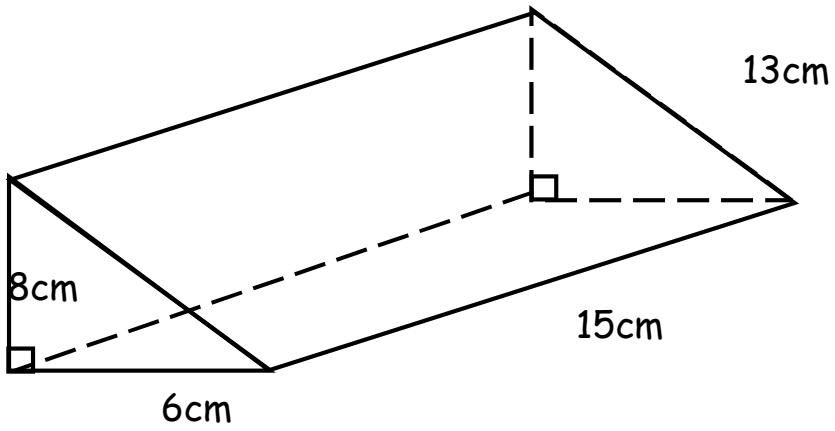
b) Calculate its area

41. (a) Find the area of a parallelogram whose base area is 34cm and height is 5cm

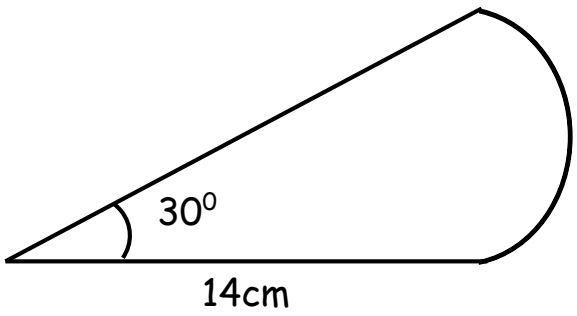
b) Calculate the T.S.A of the cylinder below (Use $\pi = \frac{22}{7}$)



42. Find the surface area of the figure



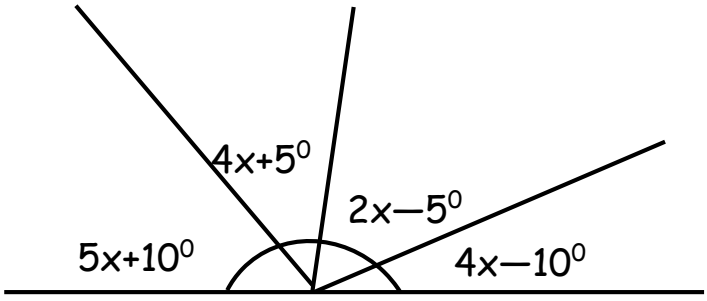
b). Calculate the circumference of the figure below (use π=3.14)



END

SECTION A

1. Simplify: $3(p - q) - (p + q)$
2. Jane is 4 times as old as Mary. If the difference in their ages is 18 years. How old is Mary?
3. Find the value of $m + yn$; if $m = {}^{1}/_{2}$, $y = {}^{2}/_{3}$ and $n = {}^{1}/_{4}$.
4. Solve : $\frac{10}{w} + \frac{2w}{4} = \frac{12}{w}$
5. Subtract: $2y - 4$ from $5y - 4$
6. Simplify:$7w - 5y - (5w - 7y)$.
7. Magala is k years and 17 years younger than Matama. How old is Magala if their total age is 31 years.
8. Solve $3x + 7 \leq 13$.
9. Solve for m: $\frac{3m+4}{5} = 2 + m$
10. Find the solution set for: $-16 < 3k = 4 + 6$
11. Find the value of x



12. Simplify: $4ab - 6y - 5ab + 3y$
13. Simplify: $4 - 3(4 + 6n)$
14. Solve the inequality: $3 - 2n < 15$
15. Given that $a = 5$, $b = 3$, and $c = -2$. Find the value of $\frac{ab}{b-c}$
16. Factorize; $2xy - 4x$

SECTION B

17. A worker was given a task of carrying 76 books from the store to the library. Every trip he carried 4 less books than the previous trip. If he made four trips. How many books did he carry in the first two trips?

18. Okello bought 20 oranges at Sh. 2000 each but k of them got spoilt. He sold the remaining oranges at Sh. 3000 each and made a profit of Sh. 8000. Calculate the value of k.

19. Acero is 14 years younger than Murungi. In 10 years' time, Murungi will be twice as old as Acero. How old will Acero be then.

20. Solve: $\frac{2x+2}{5} = \frac{x+4}{4}$

    b) Given that $A = \prod r^2$, r = 1.4 cm and $\prod = 3\frac{1}{7}$. Find A

21. The length and width of the rectangle are in the ratio of 6:5 respectively. If the area of the rectangle is 480cm^2. Calculate its perimeter.

22. Given that $x = 2y + 1$. Complete the table

x	1	_____	5	_____	9
y	_____	1	_____	3	_____

    b). Solve: $\frac{3y-1}{2} = \frac{7y+1}{6}$

23. a) Kiyingi is twice as old as his son. In 4 years' time, their total age will be 50 years. How old is the son now?

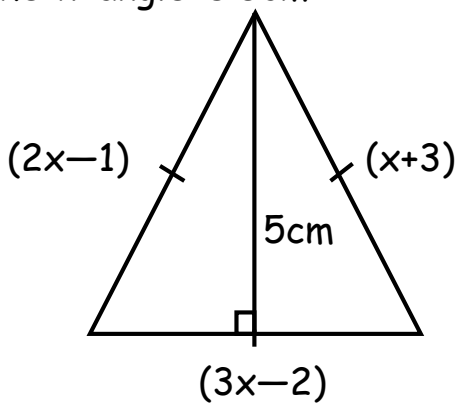
    b) Solve: $0.3(5x + 6) = 0.9(x + 4)$

24. a) Solve for P: $4(4p - 2) - 4(2p + 6) = 16$

    b) A farmer had 40 sheep on a farm. The number of goats is four times the number of cows on the farm. If there are 48 more goats than cows, find the total number of animals on the farm.

25. Amito bought 8 pencils at Sh. (y-1500) each and 2 mathematical sets at Sh.(y+1000) each. She spent Sh. 53000 altogether. Find the amount of money spent on pencils.

26. The figure below is a triangle with sides as shown below. The height of the triangle is 5cm



    a) If the perimeter of the triangle is 36cm. find the value of x

    b) Calculate the area of the triangle

27. Julius' age is $\frac{2}{5}$ of Bob's age. Mubale is 6 years older than Bob. If their age is 30 years. How old is each of them?

28. a) Solve the equation: $\frac{2x-3}{4} = \frac{1-4x}{2} + x$

    b) If $K = 3$, $V = 8$ and $M = 3$. Evaluate $VK - M^2$

29. The length o f a rectangle is 70cm more than its width. If the perimeter of the rectangle is 340cm. find the length of its diagonals

    b) Solve: $2 - \frac{2x}{3} = 4$

30. Ambrose is 8 years old and Robert is 38 years

    a) In how many years will Robert be twice as old as Ambrose?

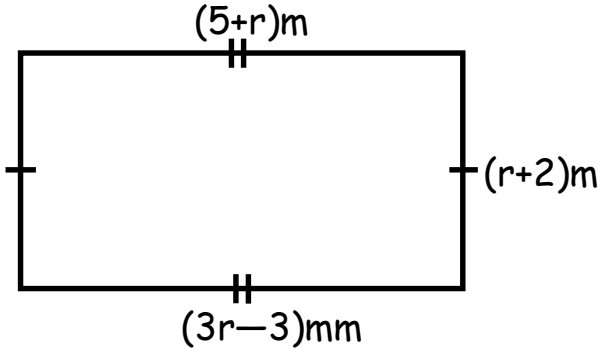
    b) Find Robert's age after the period in 21 (a) above

31. a) Simplify: $\frac{2}{3}(6r-3)-\frac{1}{2}(4-2r)$

    b) solve and find the solution set for: $12 \geq -4(y-1)$

32. A duck costs half as much as a hen. A hen costs Sh. 500 more than a broiler. If the total cost of the three items is Sh. 20,000. Find the cost of the duck.

33. Below is a rectangle. Study it and use it to answer questions that follow



    a) Find the value of r

    b) Calculate its perimeter

    c) Find its area

34. At Tata Owen super market, a basin costs thrice the cost of a ruler and a pen costs sh. 1000 less the cost of a basin. If John bought three items at Sh. 6000. Find the cost of each item

END