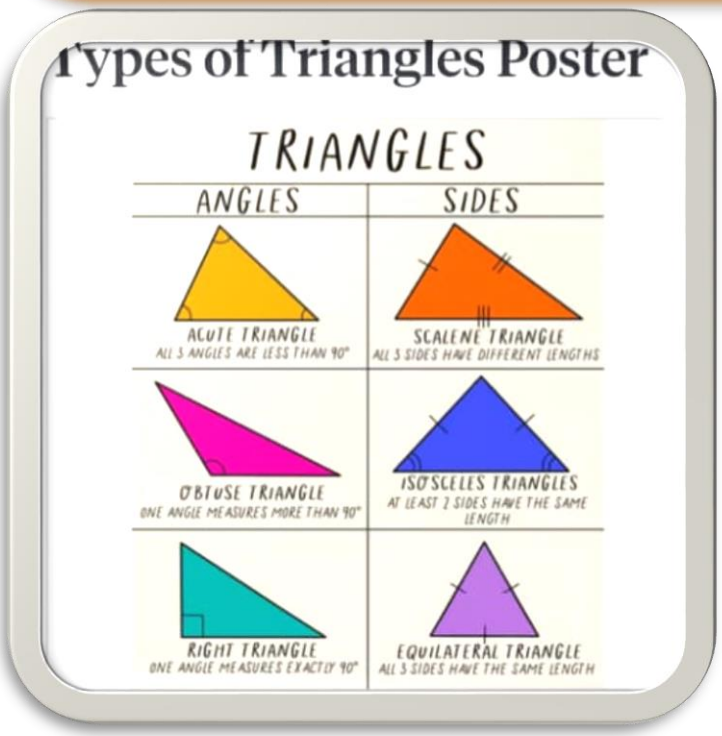
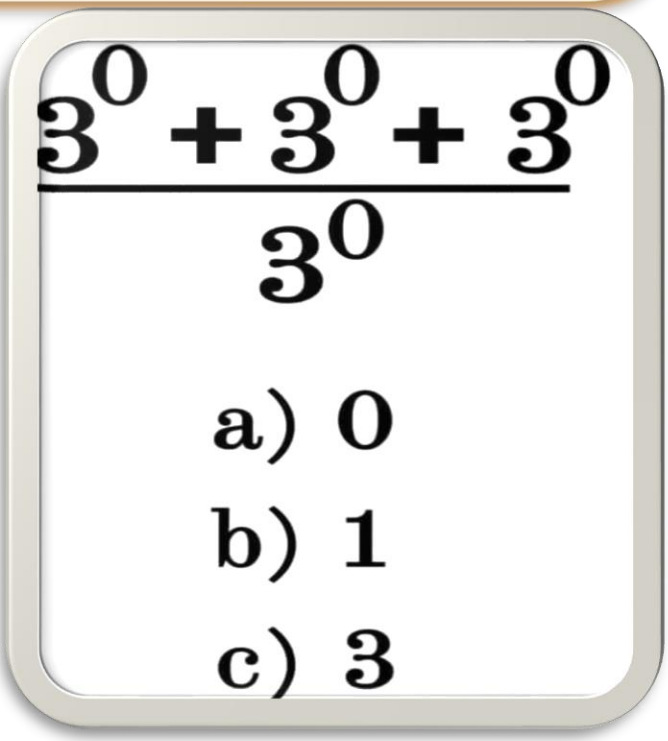
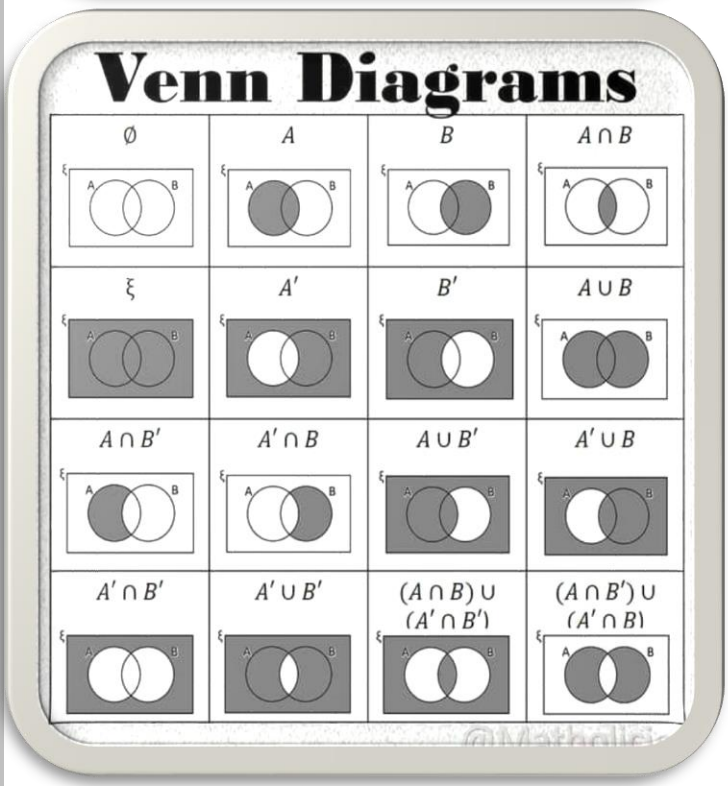
KACEL EDUCATIONAL RESEARCHERS CONSULTANCY

PLE MATHEMATICS QUESTION BANK (2006-2024)







MATHEMATICS PLE 2024

CANDIDATE'S INFORMATION

Index number :.....

Name :.....

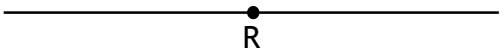
Signature :.....

School name :.....

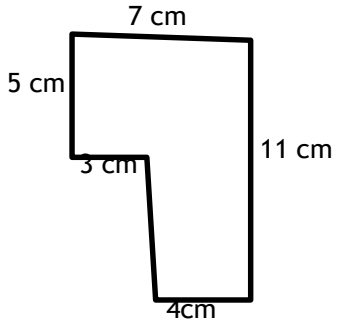
SECTION A: 40 MARKS

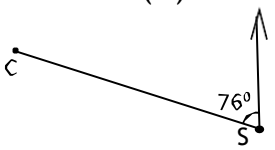
Questions 1 to 20 carry 2 marks each

1	Work out: 3 5 x 3 _____	2	Write CXIV in Hindu Arabic Numerals
3	Given that M = {b, a, t}. write down all the subsets of set M.	4	Find a fraction equivalent to $\frac{4}{7}$

5	Expand 3405 using powers of ten.	**6**	Using a ruler and a pair of compasses only, construct a right angle at point R 

7	Given that a = 3, b = 1 and n = 2, find the value of $2a^nb$.	**8**	Find the next number in the sequence: 2, 3, 6, 11, 18, ...
9	It takes Ankunda 35 minutes to walk from school to home. If she arrived home at 12:20 p.m, what time did she leave school?	**10**	Otunu sold a goat and made a profit of sh 18,000. The cost price of the goat was sh 90,000. Calculate Otunu's percentage profit.
11	Find the largest number that divides both 24 and 18 without a remainder.	**12**	Work out : 42 - 21 + 3

13	The range of a set of scores is 23. The highest score is 76. Find the lowest score.	**14**	Find the perimeter of the figure below. 

15	A school cook requires 24 kg of maize flour to feed 120 pupils. Find in grammes, the amount of maize flour the cook would require to feed 3 pupils.	**16**	Akiiki bought a suit at Kenya shillings (Ksh) 11,500. If the exchange rate was 1 Ksh = Ug.sh 32, how much money would Akiiki have paid for the suit in Uganda shillings (Ug.sh)?
17	Solve: $3 - 2y < 9$	**18**	The diagram below shows the position of a church (C) from a school (S)  Find the bearing of the church from the school
19	If today is Monday and a cake baked today can expire after 16 dats, what day of the week will the cake expire?	**20**	One morning, the temperature on top of a mountain was -30C. The temperat ure rose by 80C in the afternoon. Find the afternoon temperature.

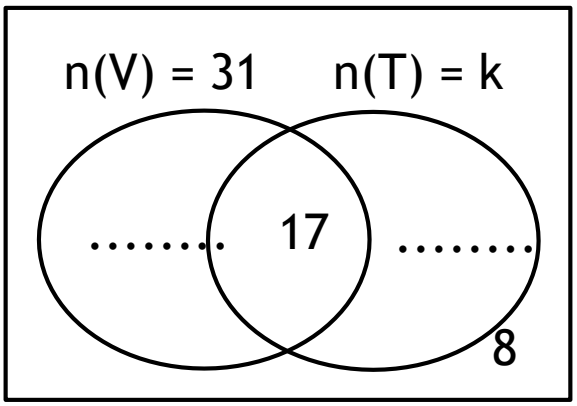
SECTION B: 60 MARKS

21 Work out : $\dfrac{2.92 - 2.36}{0.068 + 0.012}$

22 In a class, 31 pupils like volleyball (V) and k pupils like table tennis (T) 17 pupils like both games while 8 pupils do not like any of the two games. The number of pupils who like table tennis only is twice the number of those who do not like any of the two games.

a) Use the given information to complete the venn diagram below.

n(£) = ...



b)	Find; (i) the value of k
ii)	the probability that a pupil picked at random from the class likes both volley ball and table tennis.
23 **a)**	A taxi and a bus were hired to transport people for a function. The taxi transports 14 people when full while the bus transports 69 people when full. The taxi made five trips and the bus made one trip. The taxi and the bus made the trips when full. Find the total number of people that were transported to the function.

b)	The taxi owner was paid sh 56,000 per trip. Calculate the amount of money that was paid for each person.
24	Given that $202_{p} = 1221_{three}$, find the value of p.

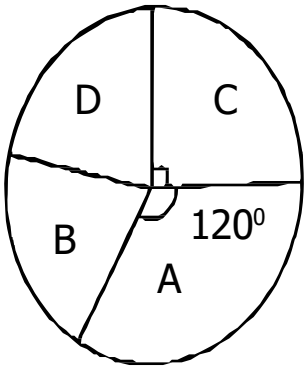
The table below shows the amount of money Rukia paid for food stuff to a business woman after she was given a discount of sh. 2,200

(a) Study and complete the table.

Ite	Quantit	Cost per	Amoun
Rice	4 kg	sh 3,800	sh .....
Beans	.... kg	sh 5,000	sh 30,000
Irish Potatoes	0.5 kg	sh	sh 1,600
	TOTA		sh

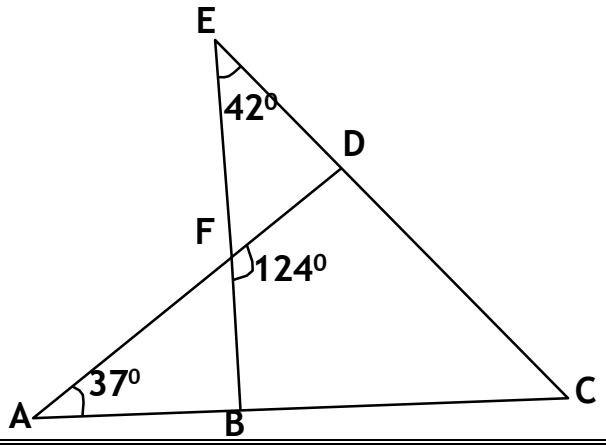
b) Find how much money Rukia would have paid without the discount.

26 (a) Using a ruler and a pair of compasses only, construct a trapezium ABCD in which line AB = 8cm, angle DAB = angle ABC = 600 and line AD = BC = 3 cm

	(b) Measure angle ADC. .....
27	A motorcycle tyre made 40 complete turns to cover a distance of 5280 cm. Calculate the radius of the tyre. (π (Use $= \frac{22}{7}$).
28	The pie chart below represents the population of four towns A, B, C and D. The population of town A is 3000 people and that of town B is 1800 people. Study the pie chart and use it to answer the questions that follow.  Calculate the population of; (a) town C.

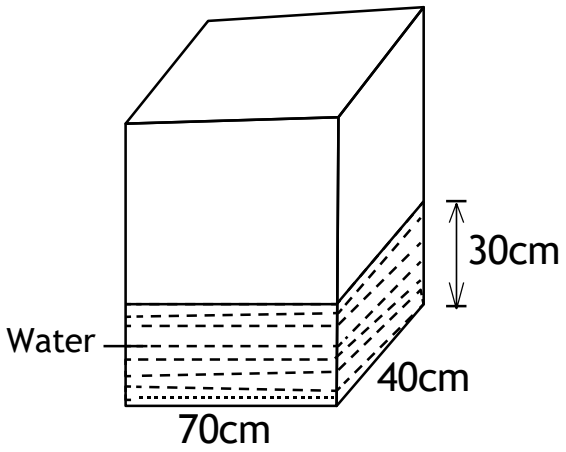
	(b) town D
29	(a) Solve: $\frac{5t - 6}{12} = t + \frac{2}{}$
b)	Subtact (2m - 3) from (5m t 2)

30 In the diagram below, angle DAC = 37^0, angle BEC = 42^0 and angle BFD = 124^0. Study the diagram and answer the questions that follow.



Find the size of

a) angle EBC

b)	angle DCA
31	The diagram below shows a tank with a rectangular base containing some water. Study and use it to answer the questions that follow. 

a)	Calculate the volume of the water in the tank
b)	If 28 litres of the water was removed for washing clothes, calculate the height of the water that remained in the tank,

32	A motorcyclist left home for town at 8:00 a.m , riding at a speed of 40km/h. After 30 minutes, he got a flat tyre which took him 45 minutes to repair. The distance between the home of the motorcyclist and town is 68 km. (a) Find the distance the motorcyclist had covered before he got the flat tyre.
	b) Calculate the speed at which the motorcyclist had to ride in order to reach town at 10:00 a.m.

MATHEMATICS PLE 2023

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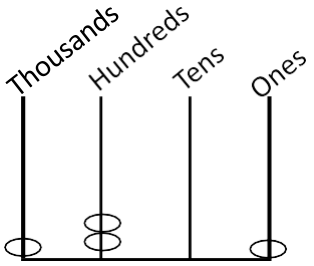
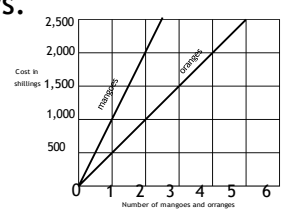
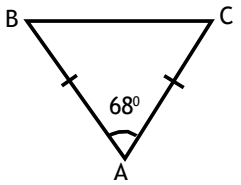
SECTION A: 40 MARKS

Questions I to 20 carry 2 marks each

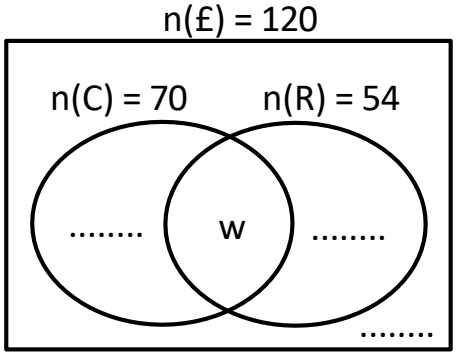
1	Work out: 63 + 54	**2**	Write the base ten number shown on the abacus below. 
3	Given that R = {a,b,c,d} and S= {a,f,p,c,s}, find n(RuS)	**4**	Arrange the integers $^{-}3$, 4, 0 and $^{-}1$ in ascending order.
5	A training for scouts started on a Wednesday and took 30 days. Find the day of the week on which the training ended.	**6**	Change 750 millilitres into litres.

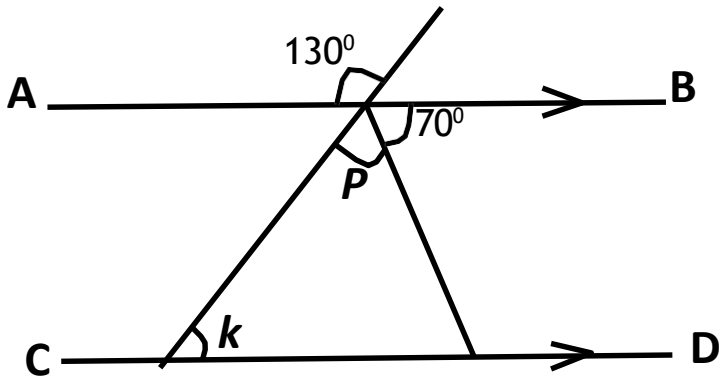
7	Find the value of $4^2 + 3^2 \times 9^0$	**8**	A meeting that took 2 hours and 15 minutes ended at 1:20 p.m. At what time did the meeting begin?
9	Write the solution set for the inequality $P \leq 3$	**10**	Find the next number in the sequence: 1, 8, 27, 64, ...
11	Change 14_{ten} to base three	**12**	The graph below shows the cost in shillings of mangoes and oranges.Study the graph and use it to answer the question that follows.  Find The Total Cost Of 2 Mangoes And 3 Oranges.
13	Given that 78t is a three-digit number which is divisible by 9, find the digit represented by t.	**14**	Using a ruler and a pair of compasses only, construct an angle of 45^0 in the space below.

15	Simplify: 5q - 2r - 3q - r	**16**	A farmer sold the following number of eggs in a period of three days; 62, 73 and 78. Calculate the average number of eggs the farmer sold in that period
17	A business bought a watch at shs 45,000. He sold it and made a loss of shs 1,500. Find his selling price	**18**	In the diagram below, calculate the size of angle ABC. 
19	In one hour ,the minute hand of a clock covers 88 cm. Calculate the length of the minute hand. (Use $\pi = \frac{22}{7}$)	**20**	A pupil scored 20/25 in the first team Mathematics test and 18/20 in the second term Mathematics test. In which test did the pupil perform better?

SECTION B: 60 MARKS

21 a)	Simplify: $\frac{1}{2} - \frac{1}{4} \div \frac{4}{5}$

b)	Work out : $\frac{0.27 \times 1.2}{0.9}$
22	An athlete covered 400 metres in 48 seconds. Calculate the speed of the athlete in kilometres per hour.
23	A total of 120 guests were invited for a marriage ceremony. 70 guests attended the church service (C), 54 guests attended the reception (R) and w guests attended both the church service and the reception. 40 guests did not turn up for the marriage ceremony. (a) Use the given information to complete the Venn diagram below. 
b)	Calculate the number of guests who attended both the church service and reception

24	In a certain school, there are 126, 90 and 72 pupils in Primary Five,Six and Seven respectively. In each class, groups with equal number of pupils were formed. (a) Find the largest number of pupils in each group.
b)	How many groups were formed in Primary Five?
25	In the diagraam below, line AB is parallel to line CD, Study the diagram and use it to answer the questions that follow.  Find the size of: (a) angle p.

(b)	angle k
26.	A carton of salt contains 40 packets. Each packet has a mass of 250 grammes. (a) Work out the mass in Kilogrammes, of all the packets of salt in the carton.
b)	A family uses a packet of salt every 5 days. Find the number of days the carton will last the family.

27	Using a ruler and a pair of compasses only, construct a kite ABCD in which diagonal AC = 6cm. Diagonal BD bisects AC at X such that BX = 3cm and DX = 5 cm.
c)	The distance from Mbale to Kampala is 275Km. Calculate the average speed of the bus for the whole journey.

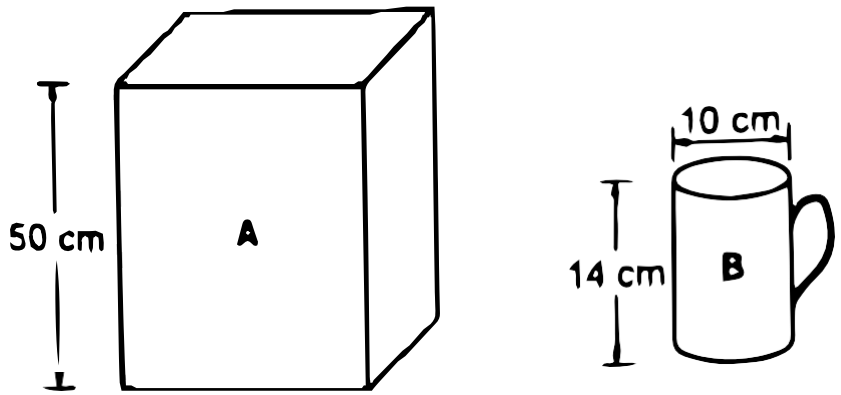
28.	A man is four times as old as his daughter. Six years ago, the sum of their age was 48 years. Find: (a) the age of the daughter now.
b)	the age of the man six years ago

29. A bank bought and sold foreign currencies in Uganda shillings (Ug.sh) on a certain day as shown in the table below. Study the table and use it to answer the questions that follow.

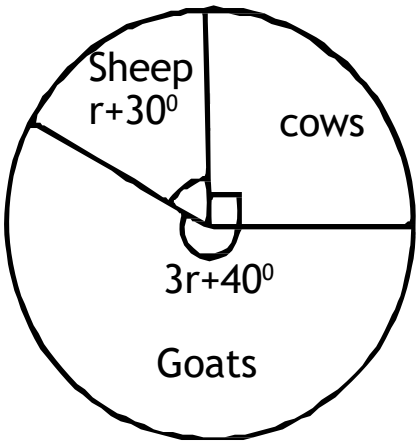
(a) A tourist had E600 and exchanged them for Uganda shillings. Find the amount of money in Uganda shillings the tourist got.

(b) Moses had US dollars 200 to exchange for kenya shillings. Find the amount of money in Kenya shillings he got from the bank

Currency	Buying in Ug.sh	Selling in Ug.sh
1 Kenya shilling (ksh)	24	26
1 US dollar ($)	3,900	3,950
1 Great Britain pound (E)	4,400	4,700

30.	A farmer employed two workers to dig a piece of land. The first worker could dig the land alone in 6 day. The second worker could dig the same piece of land alone in 3 days. The two workers dug the land together. (a) Find the number of days they took to dig the piece of land.
b)	The farmer paid each worker sh 15,000 per day. Calculate the amount of money the farmer spent to dig the piece of land.
31.	Forty full cups of water in cup B fill container A. Study the diagrams and answer the questions that follow. 

a)	Find the volume of Cup B. (Use $\pi = \frac{22}{7}$)
b)	Calculate the base area of container A
32.	The pie chart below represents the number of animals reared on Amanya's farm. Study the pie chart and use it to answer the questions that follow.



(a)	Find the value of r.

b)	Given that there are 11 more goats than sheep on the farm, calculate the total number of animals on the farm.

MATHEMATICS PLE 2022

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Index number :.....

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District name :.....

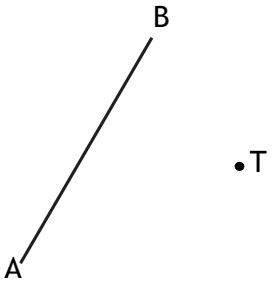
SECTION A: 40 MARKS

Questions 1 to 20 carry 2 marks each

1	Work out: $\frac{3}{5}+\frac{1}{5}$	2	Write 546 in Roman numerals.
3	Work out: 127 x 3	4	Given that PuQ = {1,2,3,4,5,6,7,8}, PnQ = {1,4,7} and P' = {5,6,8}, list the elements of set P.

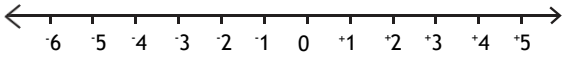
5 Find the next number in the sequence: 1, 3, 7, 13, 21, ...

6 Using a ruler and a pair of compasses only, construct a line through point T parallel to line AB.



7 Write the number whose standard form is 7.43×10^2

8 Represent the number operation -5 + +7 on the number line below



9 Solve:
$2a - 6 = 10$

10 A packet of biscuits weighs 200 grammes. Calculate the total weight in kilogrammes of 30 packets of biscuits.

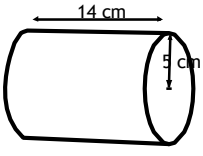
11 The drawings below show cards with numbers written on them.

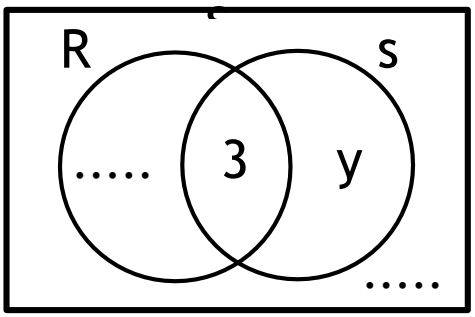
4	5	6	7	8	9

The cards were then put in a bag.Find the probability that a card picked at random from the bag has a composite number.

12 Work out:

$$\begin{array}{r} 1001_{\text{two}} \\ -\ 111_{\text{two}} \\ \hline \\ \hline \end{array}$$

13	A poultry farmer sells 30 eggs at sh 12,000. Find the cost of 25 eggs.	**14**	Round off 2498 to the nearest hundreds.
15	The weight of a teacher is 72 kg. The average weight of the teacher and three pupils is 50 kg. Calculate the total weight of the pupils.	**16**	Town M is South East of town V. Find the bearing of town V from town M.
17	A businesswoman borrowed sh 100,000 from a savings group which charged her an interest rate of 3% per month. Calculate the interest she paid after a period of six months.	**18**	Peter walked a distance of 2 km in 20 minutes. Find his speed in kilometers per hour.
19	Given that m =8 and n = 6, find the value of $\sqrt{mn + 1}$.		Calculate the volume of the cylinder below (Use $\pi = \frac{22}{7}$). 

2	In a village, 3 farmers grow both rice (R) and sunflower (S), 24 farmers grow rice and y farmers grow only sunnflower. 2y + 9 farmers
a)	Use the given information to complete the venn diagram below. 

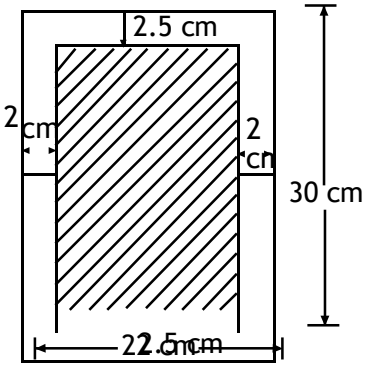
b)	Given that the number of farmers who grow rice only is equal to the number of farmers who grow one of the two crops, find the value of y.
c)	How many farmers grow sunflower?

22	A trader bought 500 mangoes at sh 250 each. The trader then sold 100 of the mangoes at shs 350 each and the rest at sh 300 each. Calculate the profit the trader made.
23	Work out: $\frac{0.75 + 0.25}{0.65 - 0.4}$
24	A motorist left his home at 8:40 a.m and travelled to town for 3 hours at an average speed of 64 km/h. He stayed in town for 30 minutes and then travelled back home a) Calculate the distance from the motorist's home to the town

b)	At what time did the motorist leave the town?
c)	Calculate the speed at which the motorist travelled back if he reached home at 3:10 p.m
25	The sum of three consencutive counting numbers is 78. Find the largest number.

26	**a)** Using a ruler and a pair of compasses only, construct triangle ABC in which line AB = 7cm, AC = 6cm and Angle CAB = 45^0
b)	Measure angle ACB

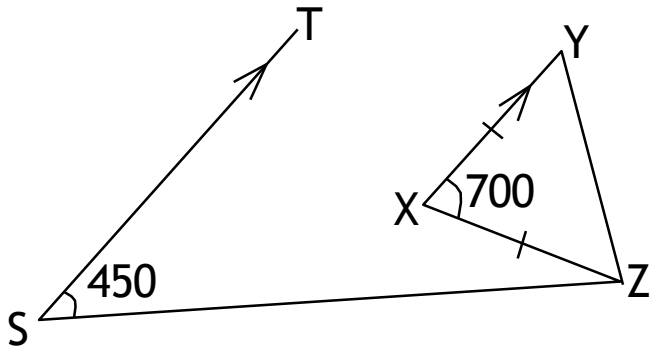
27 The figure below represents a photograph enclosed in a photo frame. The length of the photo frame is 30 cm and the width 22cm. The area covered by the photograph is shaded. Study the figure and use it to answer the questions that follow.

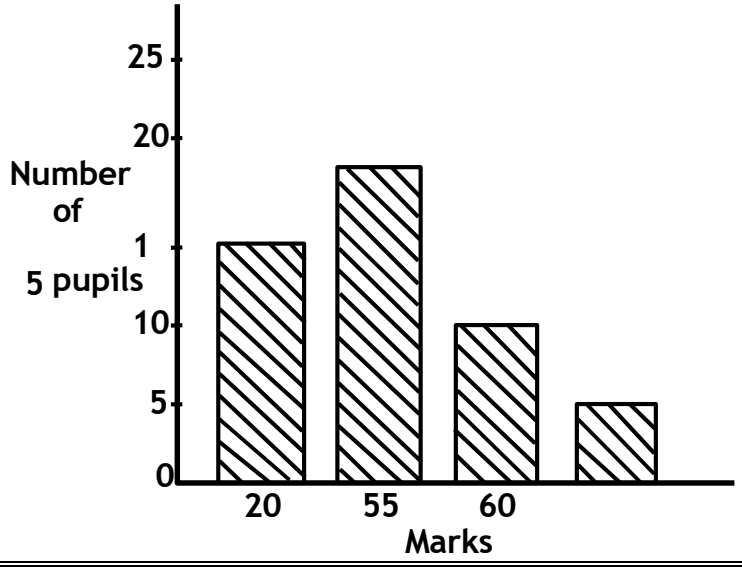


a) Find the length of the photograph.

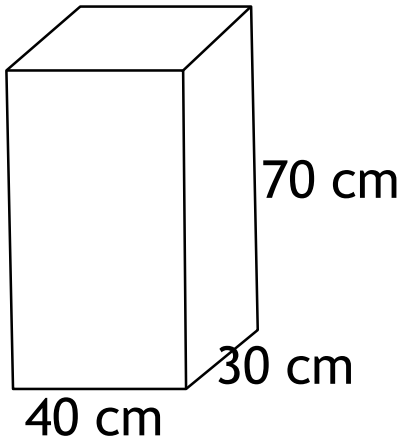
b) Calculate the area of the frame not covered by the photograph.

28 A mathematical set costs sh 2,000 more than an ecercise book. The cost of two exercise books is the same as $\frac{2}{5}$ of the cost of a mathematical set. Find the cost of an exercise book

29	In the figure below, line XY = XZ and line TS is parallel to line XY. Angle TSZ = 45^0 and angle YXZ = 70^0. Study the figure and use it to amswer the questions that follow. 
	Find the size of angle; (a) XYZ
	(b) SZX

30	The bar graph below shows marks scored by pupils in a test. Study the graph and use it to answer the questions that follow. 
a)	Find the number of pupils who did the test

b)	Calculate the mean mark of the pupils
31	A company supplied text books to three schools; F, G and H in the ratio 4:6:5 respectively. School F received 72 books less than school G. a) Find the number of text books supplied by the company
b)	Calculate the number of books school H got.

b)	Calculate the mean mark of the pupils
32	The diagram below shows a tank full of water. The water leaks at a rate of 1.5 litres per hour. Study the diagram and use it to answer the questions that follow. 
a)	Find the capacity of the tank in litres

b)	Calculate; i) the amount of water in litres that will leak out of the tank in 12 hours
	ii) the height of the water that remains in the tank after 12 hours.

MATHEMATICS PLE 2020

CANDIDATE'S INFORMATION

Index number :.....

Name :.....

Signature :.....

School name :.....

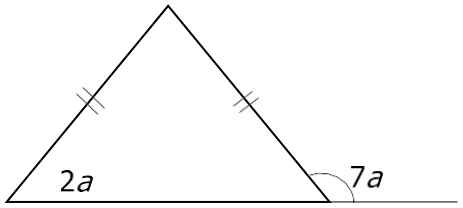
District name :.....

SECTION A: 40 MARKS

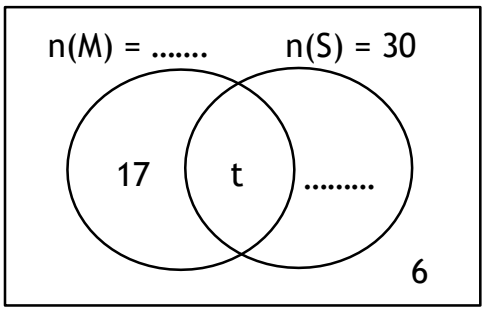
Questions 1 to 20 carry 2 marks each

1	Work out: 473 + 312	**2**	Write 27,040 in words
3	Circle all the triangular numbers in the list below. 4, 5, 6, 7, 8, 9, 10	**4**	Given that the subsets of set Q are; {m}, {k}, {m, k}, { }, find n(Q).

5	Write 5,834 in standard form	**6**	A taxi left Kampala for Gulu at 10:00pm. The journey took 5 hours. What time did the taxi arrive in Gulu?
7	Using a protractor and a ruler, draw an angle of 145^0in the space below.	**8**	Given that m = 5, n = 3 and r = $^-2$, find the value of $\frac{mn}{n-r}$
9	Change 9.85 kilogrammes into grammes.	**10**	A box contains 5 blue and 6 red pens. A pen is picked at random from the box. Find the probability that the pen picked is blue.
11	Solve: $3y$ = 5 (finite 7)	**12**	Find the lowest common multiple (LCM) of 18 and 30.

13	Workout: 9.8 ÷ 0.07	**14**	Auma sold two cocks for sh 70,000 making a profit of sh 12,000. If both cocks cost the same price, find the price Auma bought each cock.
15	Find the value of a in degrees in the diagram below.  	**16**	The ratio of male workers to female work ers in a factory is 2:3. There are 30 male workers in the factory. Find the total number of workers in the factory
17	Solve: $\frac{5}{6}K - 7 = 3$	**18**	Find the mean of the numbers: 4, 7, 8, 5.
19	The diameter of a bicycle wheel is 70 cm. Find the distance it covers in two complete revolutions. (Use $\pi = \frac{22}{7}$)	**20**	An aeroplane flying at an average speed of 260Km/h from aiport E to airport N took 45minutes. Calculate the distance between the two points

21	In a class party, two types of drinks were served, soda (S) and mineral water (M). 30 pupils took soda and t pupils took both soda and mineral water, 6 pupils took neither of the drinks while 17 pupils took only mineral water. The number of pupils who took soda only was twice that of those who took both soda and mineral water.
a)	(a) Use the given information to complete the Venn diagram below.



b)	Find the number of pupils who took both drinks.
c)	Calculate the total number of pupils in the class.

22	Convert 103_{five} to base two.
23	The list below shows prices of different items in a certain shop. - 2 kg of sugar cost sh 6,800 - 500 g of posho cost sh 1,600 - 1 kg of beans cost sh 3,000 - 3 bars of soap cost sh 10,500 (a) How much money will Opio pay for 3 kg of sugar?
b)	Nakitto buys 1 kg of beans, 1 ½ kg of posho and 3 bars of soap. How much does she pay?

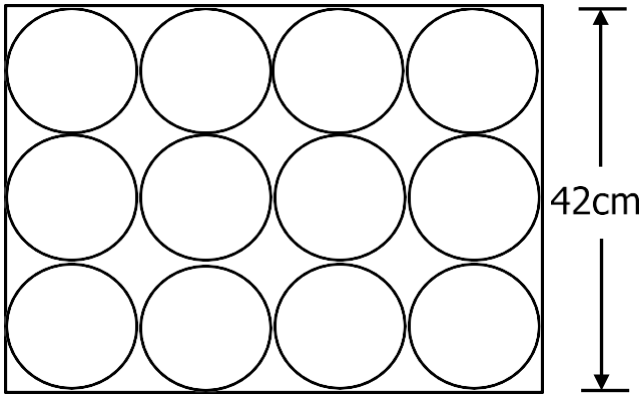
24	Kapere deposited sh 750,000 in a bank. The bank offers a simple interest at a rate of 18% per year. After some time, Kapere had an amount of sh 885,000 in the bank. (a) Find the interest Kapere earned.
b)	Calculate how long the money was in the bank.
25	Using a ruler and a pair of compasses only, (a) Construct triangle JKL where JK = 6.5cm, angle LJK = 30^0 and angle JKL = 105^0.

b) Measure the length LK. _____ cm

26. The timetable below shows the journey of a bus from Mbale to Kampala through Tororo, Bugiri, Iganga and Jinja. Study the table and use it to answer the questions that follow.

Town	Arrival time	Departure time
Mbale		09 00 hours
Tororo	09 30 hours	09 45 hours
Bugiri	10 25 hours	10 30 hours
Iganga	11 50 hours	12 00 hours
Jinja	13 30 hours	13 40 hours
Kampala	14 30 hours	

(a) Convert the arrival time of the bus at Tororo into 12 hour clock.

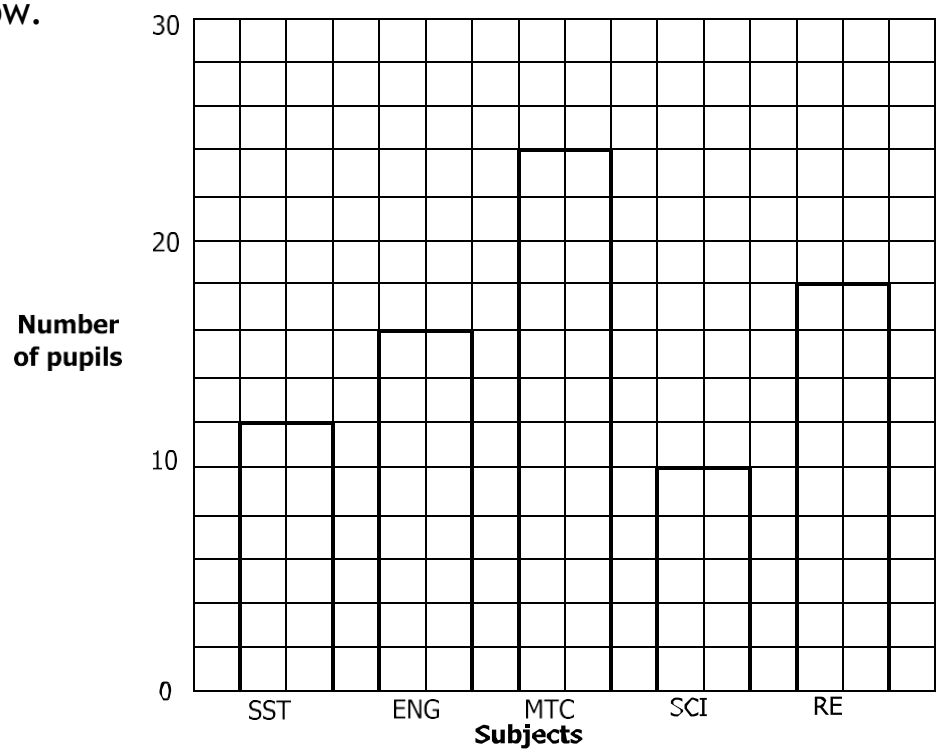
b)	How long did the bus take to travel from Jinja to Kampala?
c)	The distance from Mbale to Kampala is 275Km. Calculate the average speed of the bus for the whole journey.
27	Lukwago cut out circular cards from a rectangular manilla paper whose width is 42cm as shown in the diagram below. Study the diagram and answer the questions that follow. 
(a)	Find the length of the manilla paper.

(b)	Calculate the area of the pieces of the manilla paper that remained. (Use $\pi = \frac{22}{7}$)
28.	In a school, the fraction of the boys is $\frac{1}{5}$ more than that of girls. The school has 280 girls. (a) Find the fraction of the girls in the school.

(b)	Calculate the total number of pupils in the school
29.	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.

30.	A water tank with a capacity of 4,800 litres was $\frac{3}{4}$ full. Some of the water was sold using 20 - litre jerrycans at sh 200 each. After selling the water, of it remained. (a) Find in litres, the amount of water which was sold.
b)	Calculate the amount of money earned from the sale of the water.
31.	A book costs three times as much as a pencil. A pen costs sh 300 more than a pencil. If a book costs as much as a pen and a pencil, find the cost of a book.

32. The bar-graph below shows the number of pupils in a class and their best liked subjects. Study the graph and use it to answer the questions that follow.



(a) Which subject is liked by fewer pupils?

(b) How many pupils liked Mathematics best?

(c)	Calculate the total number of pupils in the class.
(d)	Find the percentage of pupils who liked English best.

MATHEMATICS PLE 2019

CANDIDATE'S INFORMATION

Index number :.....

Name :.....

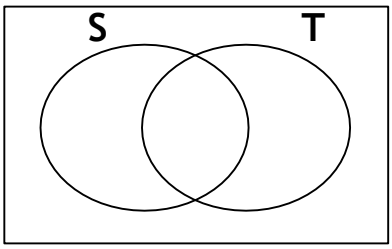
Signature :.....

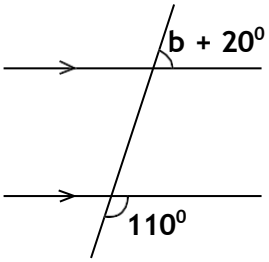
School name :.....

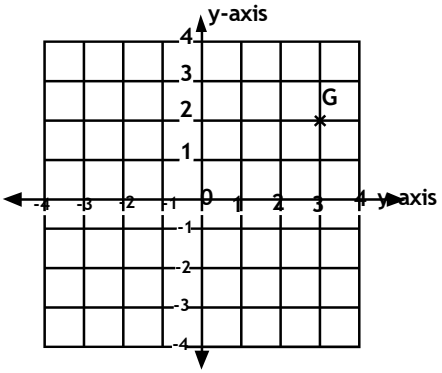
District name :.....

SECTION A: 40 MARKS

Questions 1 to 20 carry 2 marks each

1	Work out: 5 3 4 − 1 2 3 _____	2	Write XCVIIin Arabic numerals.
3	**Simplify:** 3 *p* + *p*- 2 *p*	4	In the Venn diagram below, shade the region (SUT)' 

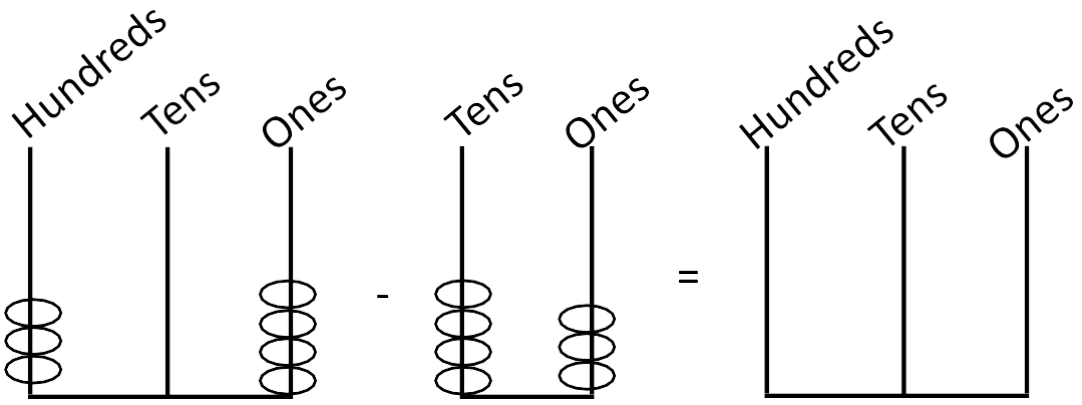
5	Round off 53.86 to the nearest tenth.	**6**	Using a pair of compasses, a pencil and a ruler only, construct a perpendi cular from point *C onto the line segme nt AB* below C A B
7	Change 250 grammes into kilo grammes.	**8**	Given that represents 26 girls in a class and represent 20 boys in the class. find the total number of pupils represented by
9	Solve: 3 + m - 2(finite 5)	**10**	In the diagram below, find the value of ***b*** in degrees. 
11	Find the next number in the sequence: 58, 33, 17, 8, _____	**12**	Calculate the speed of a motorist who covered a distance of 210 kilometres in 2 1/2 hours.

13	Change 8_{ten} to binary system	**14**	Find the smallest number that can be divided by 8 or 12 and leaves 5 as the remainder.
15	A teacher deposited sh 72,000 in a bank. After one year, the teacher earned a simple interest of shs 3,600. Calculate the simple interest rate of the bank.	**16**	Study the coordinate grapgh below and use it to answer the questions that follow: 
a)	Write the coordinates of point **G**.	**b)**	Plot the point **H**(-3,0) on the coordinate graph.
17	A train left station *K* at 11 38 hours and reached station *M* at 14 27 hours. How long did the train take to travel from *K* to *M*?	**18**	Find the solution set for $k + 2 < 6$.

19	A shopkeeper bought 19 plates at sh 34,200. At what price must the shopkeeper sell each plate in order to raise a profit of sh 3,800?	**20**	Mawa built a circular hut of circum- frence 66 metres using poles. The poles were fixed at intervals of 1.5 metres. calculate the number of poles he used.

SECTION B: 60 MARKS

21 The diagrams below represent substraction of two numbers on abacus. Study the diagrams and use them to answer the questions that follow.

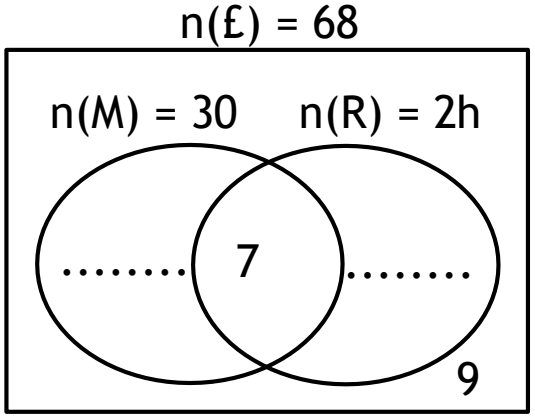


a) Write down the numbers represented in the subtraction

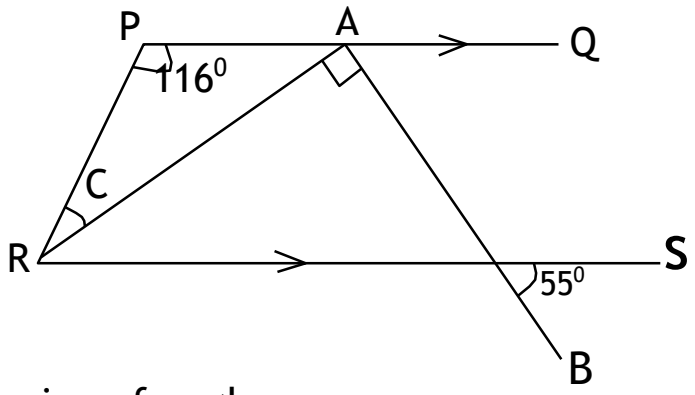
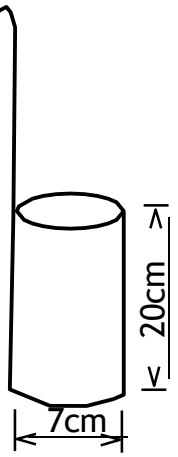
b)	Work out the subtraction and represent your answer on the third abacus.

22 A class of 68 pupils was served matooke (M) and rice (R). 30 pupils ate matooke and 2h ate rice, 7 pupils ate both matooke and rice while 9 pupils did not eat either of the foods

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



b)	How many pupils ate rice only?
23	Work out: $\frac{2.4 \times 0.5}{0.12}$

b)	Simplify: 0.37 - 1.03 + 2.6
24	In the figure below, PQ is parallel to RS and AB is perpendicular to AR. Study the figure and answer the question that follows.  Find the size of angle c.
25	The diagram delow represents a container which a shopkeeper uses to sell cooking oil. 

On a certain day, the shopkeeper sold 15.4 litres of cooking oil. How many such containers of cooking oil were sold that day?
(Use $\pi = \frac{22}{7}$).

26 Kizza went to a market with sh 30,000. She bought the items shown in the table below. After paying for all the items, she remained with sh.9,250.

Complete the table

Item	**Unit cost**	**Total cost**
2 kg of sugar	sh 4,000 per kg	sh .....
3 loaves of bread	sh ..... per loaf	sh .....
.....litres of milk	sh 1,50 per litre	sh 2,250
Total Expenditure		sh .....

27 A bus that left town A at 11:30 a.m. moving at a speed of 60 km/h reached town B at 1:30 p.m. The bus stayed at town B for 40 minutes. It then continued to town C and covered a distance of 96 kilometres at a speed of 64 km/h.

a) Calculate the total distance covered by the bus from town A to town C

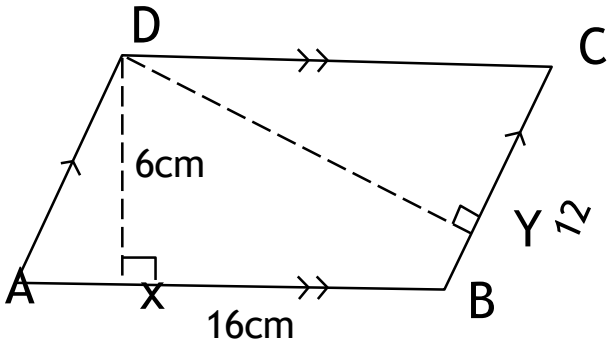
b) At what time did the bus reach town C?

28 The table shoes the marks obtained by some pupuls in a test. Use the information to answer the question that follows.

Marks	40	m	60	70
Number of pupils	2	6	3	3

If the mean mark of pupils was 55, find the value of m.

29 The number of goats, cows amd sheep on a certain farm are in the ratio of 4:3:5 respectively. There are 40 more sheep that goats on the farm.
Find the number of each type of animal on the farm.

30	In the parallelogram ABCD below, lines DX and DY are perpend iculars to AB and Bc respectively. Lime AB = 16cm, BC = 12cm and DX = 6cm 
a)	Calculate the area of the parallelogram.
b)	Find the length DY.

31	In a market, the cost of a pawpaw is sh 800 more than the cost of a mango. A mango costs two thirds of the cost of a pineapple. the total cost of the three fruits is sh 4,300. Calculate the cost of a pineapple.
32	A boatman sailed from island P on a bearing of 300^0 to island Q for a distance of 56 km. The boatman then left isalnd Q and sailed on a bearing of 230^0 to island R for a distance of 40 km. (a) Using a scale of 1 centimetre to represent 8 kilometers, draw an accurate diagram to show the route of the boatman.
b)	Find the bearing of island R from island P.

MATHEMATICS PLE 2018

CANDIDATE'S INFORMATION

Index number : | | | | | | | | | |

Name : _____

Signature : _____

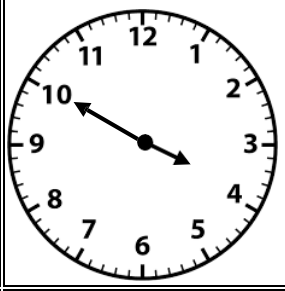
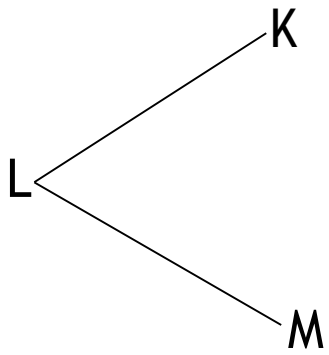
School name : _____

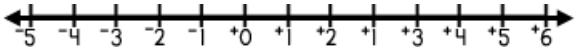
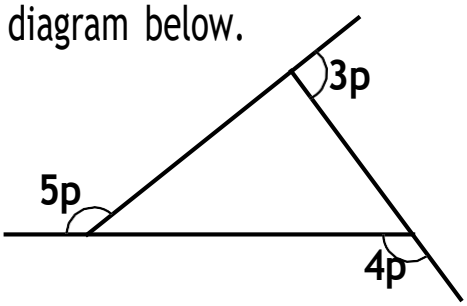
District name : _____

SECTION A: 40 MARKS

Questions 1 to 20 carry 2 marks each

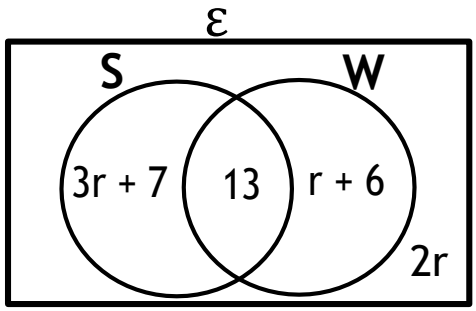
1	Workout: 36 ÷ 3	2	Write in figures: Nine thousand, thirty six
3	Given that P = {a, b, c, d, e, f, g} and Q = {b, a, f, e, h}. Find n(P∪Q)	4	A teacher counted pupils without school uniform in a class and tallied them as follows: 𝍸 𝍸 𝍸 𝍸 |||| How many pupils were without school uniform?

5	The clock face below shows time in the afternoon. Write the time shown in 24-hour clock.  	6	Simplify: $5k - 2(3 - k)$
7	A car uses 7 litres of petrol to cover 28 kilometres. How many litres of petrol can it use to cover 64 kilometres?	8	Okia bought 4 packets of washing powder each weighing 750 grams. Find the weight of the washing powder Okia bought in Kilograms.
9	Use a protractor to measure the size of angle KLM below.  Angle KLM = _____	10	Find the next number in the sequence: 1 , 2 , 10 , 37 , _____
11	Workout: (49 x 39) + (61 x 49)	12	Round off 796 to the nearest tens.

13	Workout: $^{-}5 + {}^{+}2$ on the number line below.  	14	Martha drove from town A to town B at a speed of 72km per hour. Town A is 90km away from town B. Calculate the time she took to reach town B.
15	The following heights of six children were recorded at a health centre: 53cm, 64cm, 59cm, 51cm, 63cm and 61cm. Find the median height of the children.	16	Given that 1 US dollar ($) costs Uganda shillings (Ug.sh) 3,672 and 1 Kenya shilling (K.sh) costs Ug.sh 36, find the cost of 1 US dollar in Kenya shillings.
17	Find the value of p in degrees in the diagram below.  	18	The taxi fare from Kampala to Mukono was raised by $16\frac{2}{3}\%$. The old fare was sh.3,000. Find the new fare taxi fare.
19	Solve the inequality: $3 - 2m < 15$	20	Bottles of 300 millilitres (ml) were used to fill a nine litre bucket with water. Find the number of full 300ml bottles that were used.

SECTION B: 60 MARKS

21 At a party, guests were served with soda (S) and mineral water (W) as shown in the Venn diagram below. Study and use it to answer the questions that follow.



a. If 32 guests were served with soda,
(i). find the value of r

(ii). find the total number of guests who attended the party.

b. Find the probability that a guest picked at random did not take any drink.

22 a. Express $\frac{4}{15}$ as a recurring decimal.

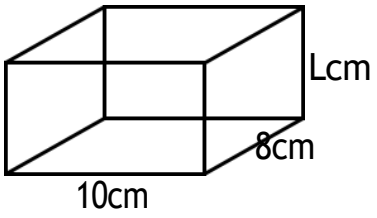
b. Simplify: $\frac{4}{5} \times \frac{3}{7} \div \frac{9}{14} + 2\frac{7}{15}$

23 a. Write the place value of 2 and 1 in 201_{three}

b. Workout: $42_{five} \times 21_{five}$

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

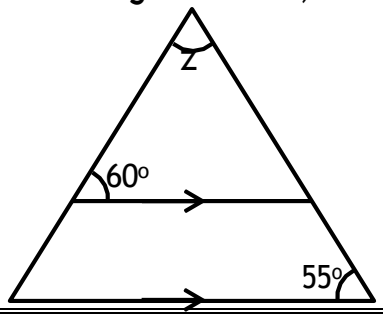
a. Find the length of edge L



b. Calculate the volume of the prism.

25 Study and complete Mukasa's shopping table below:

Item	Quantity	Unit cost	Amount
Sugar	3kg	sh _____ per kg	sh. 14,400
Rice	_ _ kg	sh. 5,000 per kg	sh. 2,500
Milk	250 ml	sh. 3,000 per litre	sh. _____
Biscuits	2 packets	sh _____ per packet	sh. _____
Total expenditure			sh. 29,650

26	a. Using a pair of compasses and a ruler only, construct a rhombus UVXY whose diagonals are 14cm and 10cm. b. Measure the length VX._____ Cm
27	The average weight of four boys is 56kg. When two other boys join the group, the average weight becomes 52kg. The sixth boy is 8kg heavier than the fifth boy. Find the weight of the sixth boy.
28	a. The interior angle of a regular polygon is 108^o more than the exterior angle. How many sides has the polygon? b. In the figure below, find the size of angle z. 

29	Joyce, Peter and Hannah shared pencils in the ratio 3:5:7 respectively. a. If Hannah got 12 more pencils than Joyce, how many pencils did they share altogether? b. Find the number of pencils Peter got.
30	Kizito is 38 years old and his sister is 24 years old. a. How many years ago was Kizito three times as old as his sister? b. How old was Kizito's sister then?

31 The figure below shows a rectangular sheet of metal. The sheet is curved to form the wall of a cylindrical tank whose height is 100cm.

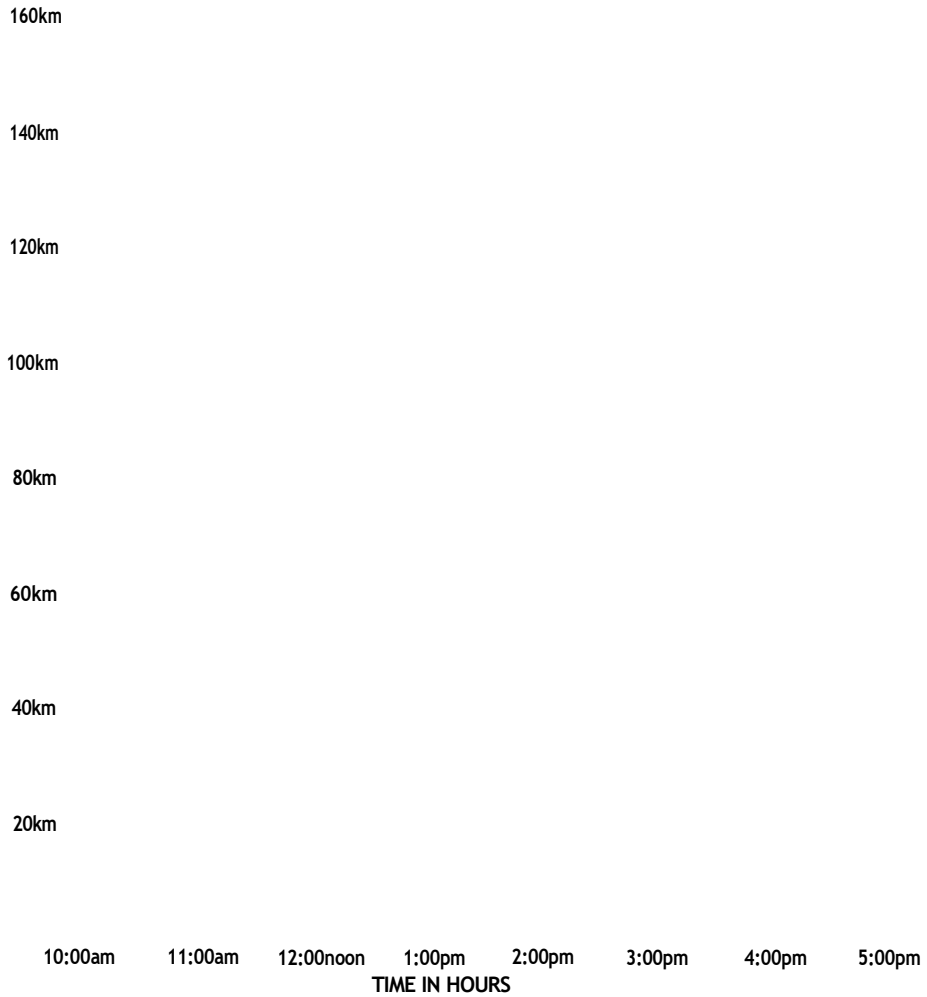
a. Find the diameter of the tank formed. ($\pi = \frac{22}{7}$)

b. Calculate the;
(i). area of the sheet needed to cover the base of the tank.

(ii). Capacity of the tank.

32 Town M is 150km from town G. A motorcyclist started a journey from town M at 10:30am. He was travelling at a speed of 25km/hr for 2 hours. He rested for 30 minutes and then continued at a speed of 50km/hr for the rest of the journey to town G.

a. Represent the motorcyclist's journey on the graph below.



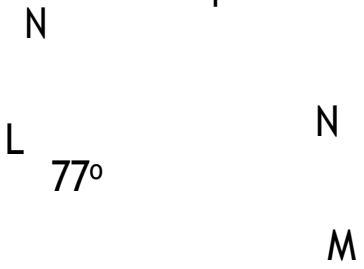
b. At what time did the motorcyclist reach town G?

_____

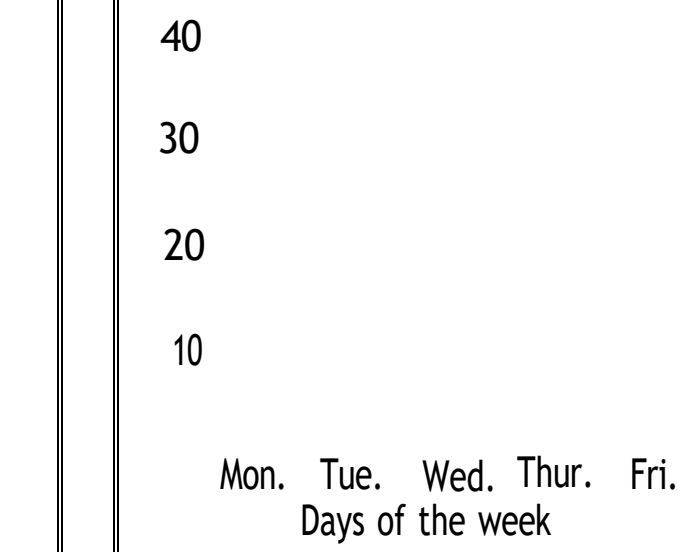
1	Workout: 32×3	2	Write 650,019 in words.
3	Workout: $2 - 5$ (finite 7)	4	Find the next number in the sequence: $^{-}11$, $^{-}8$, $^{-}5$, $^{-}2$, _____
5	Solve the equation: $7n + 2 = 23$	6	Given that set N = {c , t , p}, list all the subsets in N.

7	Find the number which has been expanded below: $(3 \times 10^{2}) + (5 \times 10^{-1})$	8	The profit on a shirt sold at sh 7,900 was sh 2,100. Calculate the cost price of the shirt.

9	Change 10 square metres into square centimetres.	10	Write 9:30a.m in the 24 hour clock.
11	Workout: $1\frac{1}{2} - \frac{2}{3}$	12	Find the value of the digit in the ten thousands place in the number 850634.

13	A box contains 20 pens. 10 are blue, 7 are red and the rest black. A pen is picked at random from the box. Find the probability that it is a black pen.	14	The diagram below shows the positions of two towns L and M. Use it to answer the questions that follow.  Workout the bearing of town L from town M
15	Using a pair of compasses, a ruler and a pencil only, construct an angle of 150^{o} in the space below.	16	Given that $a = 3$ and $b = {}^{-}2$, find the value of $a^2 - b^3$
17	Sixty six poles are fixed in a straight line along one side of a road. The poles are fixed at intervals of 10 metres. Calculate the length of the road.	18	A house can be built by 3 men in 20 days. How many men working at the same rate can build the same house in 12 days?

19 The graph below shows the number of pupils present in a class of 40 pupils in a certain week. Study it and answer the questions that follow.



Find the number of pupils who were absent on Tuesday.

20 Find the least number of sweets when divided among 8 boys or 6 girls equally, leaves 2 sweets as remainder.

21 a. Workout:

$$\begin{array}{rrrl} & 3 & 3 & 4_{\text{five}} \\ + & 1 & 2 & 3_{\text{five}} \end{array}$$

b. Given that $34_t = 112_{four}$. Find the value of t.

22 Akot went to the market and bought the following items:

3 litres of milk at sh. 2,400 per litre

250g of salt at sh. 2,000 per kg

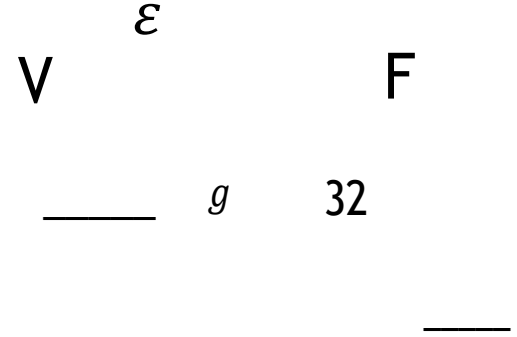
18 oranges at sh. 1,500 for every 6 oranges.

a. Calculate the total cost of the items.

b. Akot paid sh 12,000 for the items. What discount was she given?

23 In a class, 32 pupils play football (F) only, g play both volleyball (V) and football, $(2g - 10)$ play volleyball but not football while $(g - 2)$ play neither of the two games.

a. Complete the Venn diagram below using the above information.



b. Given that 62 pupils play one game only, find the value of g

c. Calculate the number of pupils in the class.

24	A school bus taking pupils to a Game park covered 75% of its journey in $1\frac{1}{2}$ hours. The bus travelled at a steady speed of 80 kilometres per hour. Find how far the school is from the game park.
25	a. Solve the equation: $\frac{3}{5}n + 6 = 2 + n$ b. Solve the inequality: $9 - 2k > k + 3$
26	In the diagram below, line DH is parallel to FE. Angle ACB = 75° and angle CBE = 135°. Angle FAD is twice angle DAC. Study the diagram and use it to answer the questions that follow. D C H 75° 135° F A B E a. Calculate the size of angle DAC b. Find the size of angle ADC.

27	Arafat deposited money in a bank which offers a simple interest rate of $2\frac{1}{2}\%$ per year. After 9 months, his account had an amount of sh. 163,000. Calculate the money Arafat deposited in the bank.
28	a. Using a ruler, a pencil and a pair of compasses only, construct a quadrilateral ABCD where line AB = 7cm, angle ABC = BAD = 60^{o} and AD = BC = 3.5cm. b. Measure the length DC. _____cm

29	The total mass of tins of honey in a box is 3.25kg. The mass of each tin is 250g. Find the number of tins in the box.
30	The diagram below shows a square BCDE enclosed in a circle with centre O and radius 14cm. Parts of the circle are shaded as shown. Study the diagram and use it to answer the questions that follow. a. Calculate the area of the circle. $(Use\ \pi = \frac{22}{7})$ b. Find the area of the shaded part.

31	In a class, $\frac{1}{5}$ of the girls are borders while $\frac{1}{3}$ 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 borders.
32	Study the coordinate graph below and use it to answer the questions that follow. a. Write the coordinates of point A. b. Plot the points B($^{+}2$, $^{+}2$) and C($^{-}1$, $^{-}4$) on the graph. c. Join points A to B and B to C. d. Locate a point D on the graph, join it to A and C such that ABCD is a kite.

1	Workout: 23 + 42	2	Simplify: 3a + a – 2a
3	Workout: $\frac{5}{9} \div \frac{2}{3}$	4	Use the Venn diagram below to find n(P∩Q)' ε P Q c a d e b f g
5	Without dividing, show which of the numbers 140 and 5070 is divisible by 3.	6	Workout: $110_{two} \times 11_{two}$

7	A dice is tossed once. What is the probability that a number less than 5 will appear on top?	8	Write the integers represented by letters a and b on the number line below. a b a = ____ b = ____

9	Show the time *''twenty five minutes to eleven''* on the clock face below.	10	In the triangle below, find the value of d in degrees. d 2d
11	The area of a square flower garden is $196cm^2$. Find the length of each side.	12	Convert $12\frac{1}{2}\%$ to fraction in its lowest form.

13	The prime factors of 12 and 90 are given below; $12 = 2^2 \times 3$ $90 = 2 \times 3^2 \times 5$ Use the given prime factors above to find the Lowest Common Multiple (LCM) of 12 and 90	14	A wire of length 161 metres was shared by some boys. The average length of the wire each boy got was 23 metres. Find the number of boys who shared the wire.
15	Find the length of the arc DK in the diagram below. $(use\ \pi = \frac{22}{7})$ 63cm	16	Apio bought 30 books at sh. 3,000 per dozen. How much money did she spend?
17	A motorist travels 64 kilometres in 40 minutes. Find the speed of the motorist in kilometres per hour.	18	The area of the shaded part of the cuboid below is $12cm^2$. Calculate the volume of the cuboid. 7cm

19	Using a ruler, a pencil and a pair of compasses only, construct an angle of 135^{o} in the space below.	20	Hakim is three times as old as Lucky. Their total age is 52 years. How old is Lucky?

21	In a class of 41 pupils, 30 play football (F), t play netball (N), 5 play both football and netball and 3 pupils do not play any of the two games. a. Use the above information to complete the Venn diagram below. n(F)= 30 n(N)= t _____ 5 _____ 3 b. Find the value of t.
22	a. Write 955 in Roman numerals. b. Find the product of the value of 2 and the value of 8 in the number 4820.

23 a. Simplify: $\frac{0.12 \times 5.4}{0.03 \times 0.6}$

b. Express the recurring decimal $0.5454\dot{5}\dot{4}$ as a common fraction.

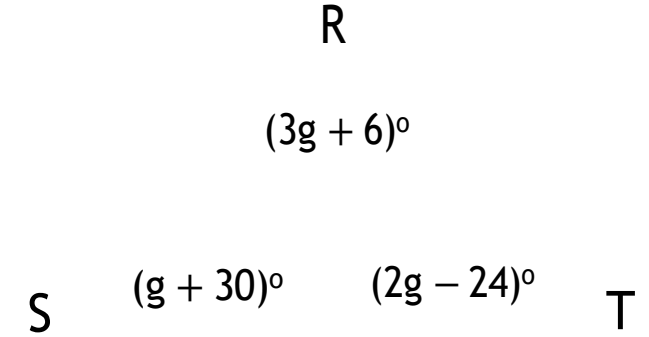
24 The exchange rates in a bank are as follows.

1 US. Dollars ($) = Ug. sh. 3,400
1 British Pound Sterling (£) = Ug. sh. 4,600 1
Kenya shilling (K.sh) = Ug. sh. 35

a. Convert Ug. sh. 1,840,000 to British Pound Sterling.

b. If a set of chairs costs $700, find the equivalent cost of the chairs in Kenya shillings.

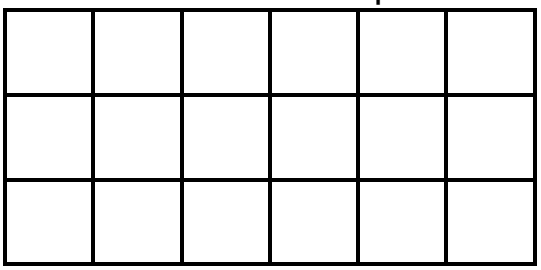
25 Study the figure below and use it to answer the questions that follow.



a. Find the value of g.

b. Calculate the size of angle RST.

26 The figure below represents a rectangular floor which is covered by square tiles of area 400cm^2 each. Use it to answer questions that follow.

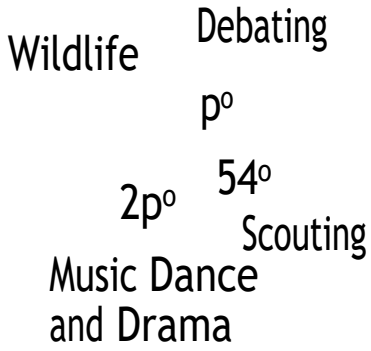


a. Find the area of the rectangular floor.

b. Calculate the perimeter of the rectangular floor.

27	A taxi driver left town A for town B at 10:30a.m driving at a speed of 80 kilometres per hour. The driver reached town B at 2:00p.m. a. Calculate the time taken by the driver to reach town B. b. Find the distance between town A and town B.
28	Hajati bought 120 shares from a village SACCO at a simple interest rate of 30% per year. Each share costs sh. 3,000. a. Find her total interest after $3\frac{1}{2}$ years. b. Calculate the total amount of money Hajati has in the SACCO.

29 The Pie chart below shows how pupils of Mpaata Primary School are distributed in various clubs in the school. Use it to answer the questions that follow.



a. If there are 216 pupils in the debating club, find the total number of pupils in the school.

b. Express the number of pupils in the debating club as a percentage of the whole school.

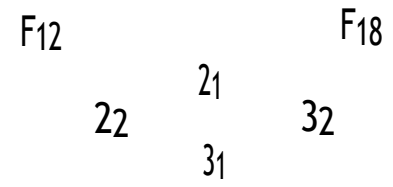
30 A cylindrical tank of diameter 70cm contains water to a height of 100cm. Find in litres the amount of water the tank contains. $(use\ \pi = \frac{22}{7})$

31	a. Given that $m = 3k$ and $k = 5$, find the value of $2k + 6m$ b. Write the solution set for the inequality: $6 < x < 10$
32	A school library is 70 metres east of the main hall. The staffroom is 60 metres from the library on a bearing of 240^{o}. a. Using a scale of 1cm represent 10metres, show the three places on an accurate diagram. b. Find the shortest distance between the main hall and the staffroom.

1	Workout: 124 – 45	2	Write in figures: Eighty thousand, ten
3	Simplify: $18x - 5(3x + 7)$	4	Given that set K = {g, m, v, z}, find the number of subsets in set K.
5	Workout $\bar{7} - \bar{3}$ on the number line below.	6	Find the sum of the 5th and the 8th prime numbers.

7	Workout: $\frac{14}{15} \div \frac{2}{5}$	8	A birthday party started at 4:30pm and lasted $2\frac{3}{4}$ hours. At what time did the party end?

9	Show all the lines of folding symmetry in the figure below.	10	A trader sold a pair of shoes at sh. 32,800 making a profit of sh. 1,200. What was the cost price of the pair of shoes?
11	In a car park, there are 192 cars. The probability that a car picked at random from the park is made in Japan is $\frac{5}{8}$. How many cars are not made in Japan?	12	How many packets of 200 grams can be got from 2.6 kilograms of salt?
13	Given that a = $\bar{2}$, b = 3 and c = 4, find the value of $b(a^2 + c)$	14	Workout: $1\ 1\ 0\ 1_{two} + 1\ 1\ 1_{two}$

15	Find the size of angle y in the figure below.  	16	The Venn diagram below shows the prime factors of 12 and 18. Use it to answer the question that follows.  Find the Lowest Common Multiple of 12 and 18.
17	Find the median of the numbers: 8 , 10 , 4 , 1 , 6 and 9	18	Gidudu has goats and sheep in the ratio of 3 : 2. If he has 24 goats, how many sheep does he have?
19	A bucket was $\frac{3}{4}$ full of water. When 4 litres were removed, it became $\frac{1}{2}$ full of water. What is the capacity of the bucket?	20	In a poultry farm, eggs were packed into boxes which hold 144 eggs each. How many boxes of the same size are needed to pack 1,008 eggs?

21 In a class, 31 pupils play tennis (T) and (d + 5) play volleyball (V) only. d pupils play both games while 3 play neither of the games.

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

ε =

V T

d + 5 d ____

b. If 27 pupils play volleyball altogether, find the value of d.

22 a. What number has been expanded below?

$(6 \times 10^3) + (2 \times 10^1) + (7 \times 10^0) + (3 \times 10^{-2})$

b. Workout: (8.5 x 14) + (8.5 x 16)

23 The table below shows the rate at which different currencies were sold and bought in a commercial bank during the month of September. Use it to answer questions that follow.

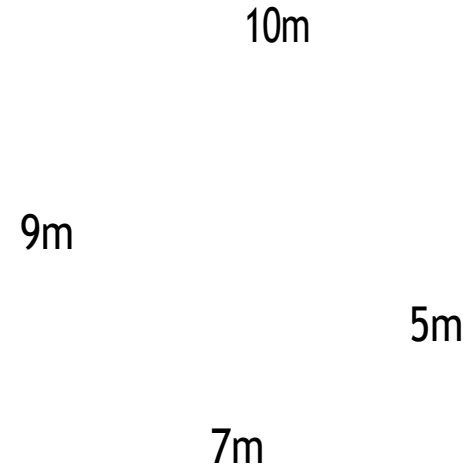
Currency	Buying in Ug. Shs	Selling in Ug. Shs
1 US dollar ($)	3,600	3,650
1 Euro €	4,000	4,020
1 Rwandan franc	4.0	5.0

a. How many Euros did Musa get for Ug. Shs. 603,000?

b. Amina came from Rwanda with 109,500 Rwandan Francs and exchanged them for US dollars. How many US dollars did she get from the bank?

24	Betty filled container A below with drinking water. She served visitors with the water using cups each of size B shown in the diagram. Find the total number of full cups of water she served the visitors. $(use\ \pi = \frac{22}{7})$
25	A fruit seller sold the following number of mangoes in six days. 60 , 35 , 40 , 28 , 42 and 35 a. What is the modal number of mangoes sold? b. Workout the mean number of mangoes sold. c. By the end of the seventh day, the mean number of mangoes sold was 44. How many mangoes were sold on the seventh day?
26	In the figure below, line AB is parallel to CD. Angle CTV = 44^o and angle TQR = 56^o. Study it and use it to answer the questions that follow. Find the size of; a. angle k b. angle g

27	The table below shows how a motor cyclist travelled from town R through towns Q and S to town P. Study and use it to answer questions that follow. a. How long did the motorcyclist stay at town S? b. Find the time the motor cyclist took to travel from town R to town P c. If the distance from town R to town P is 180km, calculate the average speed of the motor cyclist for the whole journey.
28	Madada sold his radio to Aguti at sh. 63,000 making a loss of 10%. Aguti later sold the radio to Chebet at a profit of 15%. a. Calculate the amount of money Madada paid for the radio. b. For how much money did Aguti sell the radio?

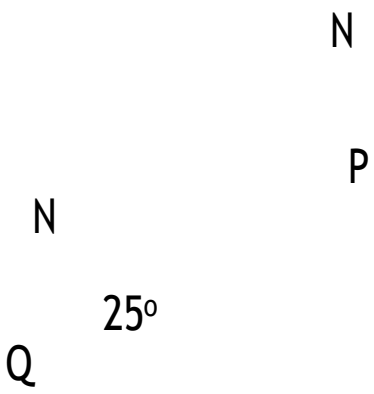
29	Study the figure below and use it to answer the questions that follow.  a. Calculate the area of the figure. b. Workout the perimeter of the figure.
30	Two taps F and E are connected to a water tank. Tap F can fill the tank in 2 hours while tap E can empty it in 3 hours. One day when the tank was $\frac{1}{3}$ full of water, the taps were opened at the same time. How long did it take to fill the tank?

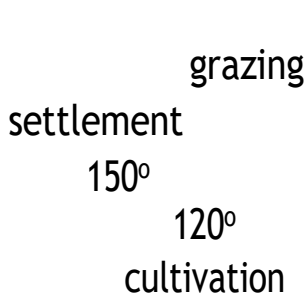
31	A geometry set costs a half as much as a book. A book costs sh.600 more than a fountain pen. If the total cost of the three items is sh.6,900. Find the cost of a geometry set.
32	A plane flew from airport K to airport T on a bearing of 120^{o}. The distance between K and T is 600km. It then left airport T for airport R on a bearing of 210^{o}. The distance between T and R is 500km. a. Sketch the journey made by the plane. b. Using a scale of 1cm to represent 100km, draw an accurate diagram to show the journey made by the plane. c. Find the bearing of airport R from airport K.

1	Workout: 14 + 53	2	Write 99,040 in words.
3	Given that K = {1 , 2 , 3 , 4 , 5} and M = {2 , 4 , 6 , 8}. Find n(K∪M).	4	Workout: $\frac{1}{6} \times \frac{3}{4}$
5	Simplify: 5ab – 2xy – ab + 7xy	6	Find the next number in the sequence: 49 , 47 , 44 , 39 , _____

7	Using a protractor, draw an angle of 55^{o} in the space below.	8	A lady bought a dress at sh. 55,000. She later sold it and made a loss of sh. 15,000. At what price did she sell the dress?

9	The mass of a packet of coffee is $\frac{1}{8}$ kg. What is this mass in grams?	10	Workout: $\begin{array}{r} 4\ 1\ 2_{\text{five}} \\ -\quad 1\ 3_{\text{five}} \end{array}$
11	Given that n = 3 and r = 2, evaluate $\frac{2n+r}{r}$	12	Today Monday, the workers on the farm are paid their salary. What day of the week will the workers' next pay be 30 days from today.
13	Write the number whose scientific notation is 9.85×10^3	14	A cyclist covers 70km in $2\frac{1}{2}$ hours. How long will he take to cover 21 km at the same speed?

15	Find the bearing of point Q from point P in the figure below.  	16	A man got a loan of shs. 120,000 from a Savings and Credit Cooperative Society at a simple interest rate of 8% per annum. He paid an interest of shs. 7,200 on the loan. How long was the loan?
17	Solve: $2^{3n} \div 2^{n} = 2^{4}$	18	The time on the 12-hour clock is: a quarter to 4 o'clock in the afternoon. Express this time in the 24-hour clock.

19	The pie chart below shows how a farmer uses her land. Use it to answer questions that follow.  Calculate the size of her land if she uses 72 acres for cultivation.
20	The graph below shows the temperature of a patient in a hospital taken from 7:00a.m to n12:00 noon in a day. Use it to answer questions that follow What times of the day was the temperature of the patient the same?

21 a. Draw beads to show the number 4,502 on the abacus below.

b. Find the sum of the values of 3 and 7 in the number 3,678.

22 A birthday party attended by 76 guests, 47 were served with beef (B) and 18 were served with both beef and chicken (C). y guests were served with chicken only while (y – 5) were not served with any of the two dishes.

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

$n(\varepsilon) = 76$

n(C) = _____ n(B) = 47

y 18 _____

y - 5

b. Find the value of y

c. Find the number of guests who were served with chicken.

23	a. Using a ruler, pencil and a pair of compasses only; i. Construct a parallelogram ABCD such that line AB = 7cm, BC = 5cm and angle ABC = 120^{o} ii. Drop a perpendicular from D to meet AB at M. b. Measure the line DM in cm.

24	The diagram below shows a rhombus PQRS. The diagonals PR = 24cm and QS = 10cm. a. Calculate the area of the rhombus. b. Find the perimeter of the rhombus.

25	a. Workout: $\frac{3.9 + 3.6}{0.06 \times 0.6}$	b. Simplify: $3\frac{1}{2} \div 2\frac{1}{2} \times 2\frac{2}{5}$
26	Apio bought the following items from a market. 2 kg of rice at shs. 3,200 per kg. $1\frac{1}{2}$ kg of meat at shs. 8,000 per kg. 500g of salt at shs. 1,400 per kg. A sacket of cooking oil at shs. 1,750. How much money did she spend altogether?	

27 The timetable below shows how a pupil spent one Saturday. Use it to answer questions that follow.

Time	Activity
7:00am - 10:30am	digging
10:45am - 12:45pm	washing
1:00pm - 2:45pm	lunch and resting
3:00pm - 4:30pm	playing
5:00pm - 7:30pm	reading

a. How long did he take playing?

b. If he dug his maize garden at a rate of 2 rows in every 30 minutes, find the number of rows he dug that day.

28 The exchange rate for Kenya shillings (Ksh.) to Uganda shillings (Ush.) and the United States Dollars (US$) to Uganda shillings are shown below.

Ksh 1 = Ug.sh 30

US$ 1 = Ug.sh 2,580

a. How many United States dollars will one get from 21,500 Kenya shillings?

b. If the cost of a new bicycle is 90 United States dollars, How much would this be in Uganda Shillings?

29	At a Kampala bus park, buses traveling to Arua and Mbarara leave after every 40 minutes and 50 minutes respectively. The first buses to the two towns leave together at 6:00am. At what time will the two buses leave Kampala together again?
30	a. The mean of the numbers 7 , 9 , 5 , x + 2 and 6 is 8. Find the value of x. b. In a bag there are 15 pens. Out of these, 4 are red and the rest are blue. What is the probability that a pen picked at random from the bag is blue?
31	Nanziri has two children, a son and a daughter. If the son is half her age, the daughter a third her age and the total age of the two children is 30 years. a. Find Nanziri's age. b. How old is the daughter?

32	A school wants to fence a circular flower garden of diameter 14cm using poles placed at intervals of 80cm. a. How many poles are needed to fence the flower garden? $(use\ \pi = \frac{22}{7})$ b. If each pole costs shs. 3,000, how much money will the school spend on the poles?

1	Workout: 22×4	2	What number has been expanded below? $20,000 + 600 + 8$
3	Write XC1X in Hindu-Arabic numerals.	4	Given that set P ={1 , 3 , 5 , 7 , 9} and set Q ={2 , 3 , 5 , 7}
5	Round off 12,962 to the nearest thousands.	6	Find the value of x in the diagram below. $3x^o$ $2x^o$

7	A pupil got a dozen of exercise books for shs. 6,000. He later sold each book at shs. 700. Calculate his profit.	8	Simplify: $4t - 2k + 5k - t$

9	Divide 6363 by 7	10	Workout: $\frac{2}{3} + \frac{1}{4}$
11	What morning time is shown on the clock face below?	12	Simplify: $^{+}4 - {}^{+}6$
13	In a class, the ratio of girls to boys is 3:2 . If there are 18 girls, how many pupils are in class?	14	Using a ruler, a pencil and pair of compasses only, bisect the angle given below.

15	Workout: 2 – 6 (mod 7)	16	Given that $a = \frac{1}{3}$ and $b = \frac{1}{9}$. Find the value of $\frac{a}{b}$
17	The Lowest Common Multiple (LCM) of two numbers is 72 and their Greatest Common Factor (GCF) is 6. If one of the numbers is 24. Find the second number.	18	Medi has 30kg of sugar to be packed in $\frac{3}{4}$kg packets. How many packets will he get?
19	Trees were planted along a straight road 305 metres long. If the trees were planted 5 metres apart, how many trees were planted along the road?		
20	The bar graph shows the number of eggs laid by chicken in Opio's farm from Monday to Friday. Study and use it to complete the table.		

Days of the week	Mon.	Tue.	Wed.	Thur.	Fri.
No. of eggs laid	25	45	____	50	____

21	Musamali bought the items in the table below from a shop. a. Complete the table. b. If Musamali paid shs. 10,800, what percentage discount was given?
22	a. Express 0.406 in standard form. b. Write 72 as a product of its prime factors.
23	In a village of 49 farmers, 20 grow millet (M), 25 grow beans (B) and y grow both millet and beans. 3y farmers grow neither of the two food crops. a. Use the information given above to complete. b. Find the value of y. a. How many farmers grow neither millet nor beans?

24	Pupils did a test and scored marks as shown in the table below. Marks 50 k 45 80 Number of pupils 2 6 3 4 a. How many pupils did the test? b. Find the value of k if the mean mark was 61. c. What was the range of the marks?
25	a. Solve the inequality: $9 \leq \bar{}3(y - 1)$ b. State the first two values of the solution set for the inequality.
26	a. A watch loses 5 seconds every one hour. How many minutes will it lose in two days? b. Express 5m/sec in km/hr

27 The pictograph represents the number of patients who were admitted in a hospital on a certain day. Study and use it to answer questions that follow.

Men's ward

Children's ward

Note: rep. 10 patients.

Women's ward

Maternity ward

a. How many patients were admitted in the hospital on that day?

b. Find the ratio of patients in the women's ward to those in the children's ward in its simplest form.

c. Express the number of patients in the men's ward as a percentage of the total number of patients.

28 A tank was $\frac{2}{3}$ full of water. When $\frac{1}{4}$ of the water in the tank was drawn, 2,500 litres remained. Find the capacity of the tank when full.

29	Opoka rides a distance of 2.97km from his home to school on a bicycle. The wheel of the bicycle has a diameter of 63cm. a. How many revolutions does the wheel make to cover the distance? $(use\ \pi = \frac{22}{7})$ b. If Opoka makes 50 revolutions in one minute, how long does he take to reach the school?
30	In the figure below, BCD is a straight line. Line BX bisects angle ABC. Line AB is parallel to line XC. Angle BCE = 50^o and angle BAC = 70^o. 70^o 50^o Find the sizes of angles; a. CEX b. DCX

31	The figure below is a cuboid. Study and use it to answer the questions that follow. a. Find the value of y. b. Find the volume of the cuboid.
32	A tourist left town A and travelled 55km westwards to town B. He then turned on a bearing of 215^{o} and travelled to town C which is a distance of 65km. a. Draw a sketch diagram to show the tourist's journey. b. Using a scale of 1cm to represent 10km, draw an accurate diagram to show the tourist's journey. c. Find the shortest distance from town C to A in km.

1	Workout: 87 – 65	2	Write in words: 55,001
3	Simplify: $\bar{6} - \bar{4}$	4	Solve: $\frac{2}{5}m = 4$
5	Given that set Q = {all prime numbers less than 10}. Find n(Q).	6	Workout: $3\frac{3}{4} \div 1\frac{1}{2}$

7	In the diagram below, find the value of k. P Q 50^o k^o R S	8	Find the value of: $2^4 + 3^0$
9	A debate which took $1\frac{1}{4}$ hours ended at 4:10p.m. At what time did it start?	10	Find the Greatest Common Factor (GCF) of 18 and 24.
11	Using a pair of compasses, a ruler and a pencil only, construct an angle of 120^o in the space provided below.	12	Write 0.08 as a fraction in its simplest form.

13	The perimeter of the rectangle below is 36m. Find its width if its length is 12m. 12m	14	Workout: $\begin{array}{r} 2\ 6\ 8 \\ \times\quad 2\ 5 \\ \hline \end{array}$
15	Given that k = 2 and p = $^{-}$3, find the value of 3k + 2p	16	A gate keeper's salary was increased from sh. 50,000 to sh. 60,000. Find the percentage increase.
17	The table below shows the goals scored by some teams in the netball competition. Use it to answer question 17. How many teams scored less than 20 goals?	18	Find the square root of $3\frac{1}{16}$
19	The number of subsets in set A is 16. How many elements are in set A?	20	A bus covered a distance of 280km in 3 hours and 30 minutes. What was its average speed?

21	In a class of 60 pupils, 30 like English (E), y like mathematics (M) only, 10 like both subjects and 5 do not like any of the two subjects. a. Use the information given above to complete the Venn diagram below. b. Find the value of y. a. How many pupils like Mathematics altogether?
22	a. Using a ruler, a pair of compasses and a pencil only, construct a triangle ABC where line AB = 6.4cm, angle CAB = 60^{o} and angle ABC = 75^{o}. b. Measure the length BC.

23	Asiimwe bought the following items from a shop. 3 bars of soap at sh. 1,200 per bar. $1\frac{1}{2}$ kg of sugar at sh. 3,000 per kg. $\frac{1}{2}$ kg of salt at sh. 1,000 per kg. a. What was his total expenditure? b. If he had sh. 10,000, how much money did he remain with?
24	A cylindrical tin of radius 7cm contains 3080 cm^3 of cooking oil. a. Joan used 2156cm^3 of the cooking oil. What is the height of the cooking oil remaining in the tin? $(use\ \pi = \frac{22}{7})$ b. Joan poured the remaining cooking oil into a rectangular tin with base area 77cm^2. What was the height of the oil in the tin?
25	a. Solve: $14p + 4 = 11$
	b. Solve the inequality: $3x + 4 > x + 8$

26	a. The interior angle of a regular polygon is 36^o more than its exterior angle. What is the size of each exterior angle? b. In the figure below, DE is parallel to FG, angle ODE = 127^o and angle OFG = 136^o. Calculate the size of angle x.
27	In Jumbo primary school, $\frac{1}{4}$ of the pupils in P.7 like science, $\frac{2}{3}$ of the remainder like Mathematics. The rest of the pupils like English. If those who like English are 33, find the total number of pupils in P.7.

28 a. Change 13_{ten} to base two.

b. Find the number which has been expanded below.
$(5 \times 10^5) + (4 \times 10^3) + (9 \times 10^0)$

29 Carefully study the diagram below and use it to answer the questions that follow. Line AB = OC and AO = OD.

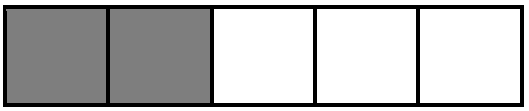
a. Find the length of arc AD? $(use\ \pi = \frac{22}{7})$

b. Workout the perimeter of ABCDA

30	a. On the graph below, plot the points A($^{-}2$, $^{+}3$), B($^{+}5$, $^{+}3$), C($^{-}2$, $^{-}1$) and D($^{+}1$, $^{-}1$). b. Join A to B, B to D, D to C and C to A. c. Name the quadrilateral formed after joining the points.

31	A man's salary was increased by 30% to sh. 312,000 per month. a. What was the man's monthly salary before the increment? b. If 5% of his new salary is subtracted as tax, what was his final salary?

32	Okidi left Kampala at 7:00am driving a lorry at average speed of 40km/hr for 2 hours to Jinja. He rested for one hour at Jinja then continued to Tororo at an average speed of 50km/hr for another 2 hours. a. Use the information to show Okidi's journey on the graph below. b. Calculate Okidi's average speed for the whole journey.

1	Work out: 3 2 x 3	2	Write in figures: thirty eight thousand, fifty.
3	Simplify: 6a – 4a + a	4	Write 54 in Roman numerals.
5	Simplify: $^{+}8 - {}^{-}2$	6	Write down the fraction of the shaded part of the drawing below. 

7	Change 750 centimetres into metres.	8	Using a pair of compasses, a ruler and a pencil only, draw an angle of 60^{o} in the space provided below.

9	Given set C = {2 , 7 , 10 , 17} and set D = {5 , 6 , 7 , 11 , 15}, find C∩D	10	In a basket, 4 bad eggs are mixed up with 3 good eggs. If an egg is picked at random from the basket, what is the probability of picking a good egg?
11	Workout: 2.0 + 0.5	12	Simplify: $\frac{5}{9} - \frac{2}{9}$
13	On the number line below, show 4 x 2.	14	Five pupils scored the following marks in a mathematics test: 55 , 72 , 61 , 93 and 60. Find the median mark.

15	In the diagram below, find the value of x.	16	It started raining at 9:45a.m and stopped at 1:25p.m. For how long was it raining?
17	How many lines of folding symmetry does the figure below have?	18	Find the next number in the following sequence. 1 , 8 , 27 , 64 , ____
19	Given that $p = -4, q = 3$ and $c = -2$, find the value of $\frac{pq}{c}$	20	Solve: $2(3x - 6) = 24$
21	The circumference of a circle is 88cm. Find its radius. $(use\ \pi = \frac{22}{7})$	22	Change $1\ 1\ 0\ 1\ 1_{two}$ to base ten.

23	Workout: $\begin{array}{r} 6\ 8\ 8\ 5 \\ +\ 8\ 4\ 3\ 7 \end{array}$	24	In the Venn diagram below, shade the area (A∩B) A B
25	In a market, one buys 5 mangoes at sh. 1,500. How many similar mangoes does one buy with sh. 1,200?	26	In the figure below, find the bearing of town B from town A. N N A 55^o B
27	A man drove a car steadily at a speed of 25 metres per second. Change this speed into kilometres per hour.	28	Arrange the following fractions in order beginning with the smallest: $\frac{2}{7}$, $\frac{2}{9}$ and $\frac{1}{3}$
29	If ⊕ represents 1500 pupils in a school, find the number of pupils represented by	30	A farmer banked sh. 126,000 for 4 months at a simple interest rate of 8% per year. Find his interest.

31	At a party attended by 60 pupils, 42 ate chicken (C), (k + 8) ate meat (M) only, k pupils ate both chicken and meat while 6 did not eat any of the two items. a. Use the information given above to complete the Venn diagram below. $\cap(\varepsilon) = 60$ C M k b. Find the value of k. c. If a pupil is picked at random, what is the probability that a pupil ate meat?
32	Fatuma went to the market and bought the items shown in the table below. a. Complete the table. b. If Fatuma went to the market with sh. 30,000, how much did she remain with?

33 a. Using a pair of compasses, a ruler and a pencil only, construct a triangle PQR in which PQ = 6cm, angle RPQ = 60^{o} and angle PQR = 45^{o}. Construct a perpendicular from R to meet PQ at Y.

b. Measure RY

34 A teacher recorded marks of P.7 pupils in a mathematics test as shown in the table below. Study it carefully and use it to answer questions that follow.

Marks	72	85	90	95	96
No. of pupils	4	12	1	4	5

a. Find the range of marks.

b. What is the modal mark?

c. Workout the mean mark of the pupils who scored above 85.

35 The rates at which the bank buys and sells United States dollars and Kenya shillings are given in the table below.

Currency	Rate at which a bank buys	Rate at which a bank sells
One U.S dollar	Ug. Sh. 2,800	Ug. Sh. 2,900
One Kenya shilling	Ug. Sh. 28	Ug. Sh. 30

a. If a trader has 300 dollars and 500 Kenya shillings, how much money in Uganda shillings can he get from the bank?

b. Peter has Ug. Sh. 160,000, how many U.S dollars can he get from the bank?

36 In the diagram below, line AB is parallel to line CD and PRD is an isosceles triangle. Study it carefully and use it to answer questions that follow.

P

a. Find the value of x.

R

b. Workout the size of angle CRP.

37 In the diagram below, AC = 56cm and EC is half of AC. Find the area of the shaded part. $(use\ \pi = \frac{22}{7})$

38	a. Solve: $6x - 9(x - 2) = 3$	b. Solve: $3 + 4m > 12 + 3m$
39	a. Workout: $\frac{0.28 \times 0.08}{1.4 \times 0.4}$	b. Workout: $1\frac{2}{5} \times 1\frac{1}{2} \div 3\frac{1}{2}$
40	The pie chart below shows how Matata spends his monthly salary. Study it carefully and answer questions that follow. a. Find the value of y. b. If he spends sh. 36,000 on clothing, how much does he earn per month? c. How much more money does he spend on food than he saves?	

41 a. What is the place value of the digit 4 in the number 340017?

b. Simplify: $\frac{b^3 \times b^5}{b^2 \times b^4}$

c. Expand 789 using powers of 10.

42 The diagram below shows a big box 60cm long, 50cm wide 40cm high and a small box 9cm long, 9cm wide and 9cm high. Study it carefully and answer the questions that follow.

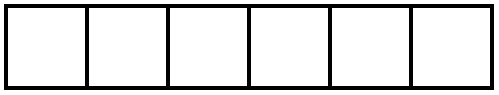
If such small boxes are to be packed into the big box,

a. find the number of small boxes that will be packed in the first layer of the big box.

b. how many layers will fill the big box?

c. how many small boxes will fill the big box?

1	Workout: 10 ÷ 2	2	Simplify: 2x + 3x
3	Write in figures: Sixty one thousand.	4	Given set A = {a , b , f , k} and set B = {a , c , k}, find n(A∪B)
5	Simplify: $\bar{5} + \bar{2}$	6	Write 49 in Roman numerals.

7	Shade $\frac{1}{2}$ of the drawing below. 	8	Using a pair of compasses, a ruler and a pencil only, bisect the line below.

9	What is the value of 5 in the figure 65011 ?	10	Change 2 . 5 metres to centimetres.
11	Cards labelled 1 to 5 are folded, put in a bucket and mixed up. What is the probability of picking a card having a prime number?	12	Seven children had the following ages: 7 , 3 , 6 , 2 , 5 , 1 and 4. Find the mean age.
13	In the triangle below, find the size of angle g in degrees.	14	Workout: 1 6 5 x 4

15	Given that $a = {}^{-}3$ and $b = 4$, find the value of $2a + 2b$	16	Find the next number in the sequence: 23 , 19 , 16 , 14 , _____

17	A fifty minute test started at 9:50a.m. At what time did it end?	18	Solve: $4p - 4 = 20$
19	In a line of vehicles, a bus was the 7th from each end of the line. How many vehicles were in the line?	20	In the Venn diagram below, shade the area (Y∪Q) Y Q
21	Workout: $\frac{5}{12} - \frac{5}{9}$	22	Change 11_{ten} to base two.

23	In the diagram below, find the co-ordinates of point K. K	24	A boy ran a distance of 6km in 45 minutes. What was his speed in kilometres per hour?
25	Arrange the following decimals in order beginning from the smallest: 0.11 , 0.5 and 0.03	26	How many edges does the figure below have?
27	Workout: 6702 – 4865	28	Four packets of mango juice cost sh. 2,000. What is the cost of seven similar packets?

29	In a P.7 class, $\frac{2}{5}$ of the pupils are girls. If there are 150 pupils in class, find the number of boys.	30	In the diagram below, find the bearing of town Z from town W.

31	In a class party of 51 pupils, 28 drank mirinda (M), 29 drank pepsi (P), 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 Venn diagram below. b. Find the value of y. c. Find the number of pupils who drank one type of soda only.
32	a. Using a ruler, a pencil and a pair of compasses only, construct a rectangle ABCD in which AB = 8cm and BC = 7cm. b. Measure the length of diagonal AC. c. Measure the angle BAC.

33 The table below shows the arrival and departure time of a bus that travels from Kampala to Hoima daily.

a. At what time does the bus leave Kampala?

b. How long does the bus stay at Bukomero?

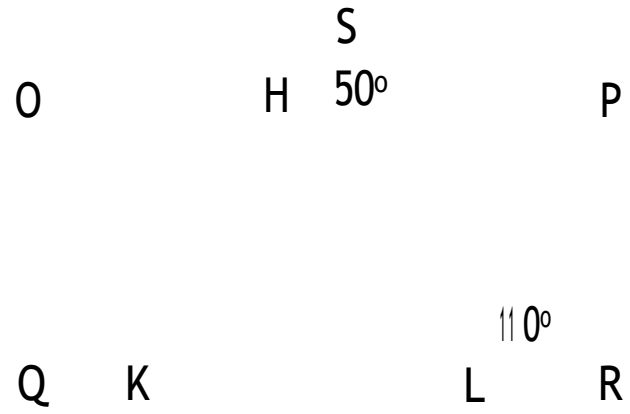
c. How long does the bus take to travel from Bukomero to Kiboga?

d. Find the total time taken by the bus to travel from Kampala to Hoima?

34 a. Solve: $2m + 3 = 18 - m$

b. Solve: $2(3x - 1) - 4(x - 1) = 4$

35 In the diagram below, OP is parallel to QR. HKL is a triangle, angle HLR = 110^o and angle SHP = 50^o. Study it and answer questions that follow.



Find the size of;

a. angle y.

b. angle m.

36 a. Find the number which has been expanded below.

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

b. Change 1011_{two} to base ten.

c. Find the value of x: $3 + 3 = x$ (finite 4)

37	Find the area of the shaded part in the diagram below. $(use\ \pi = \frac{22}{7})$
38	The mean of the scores 8 , 9 , 6 , 4 and x is 6. a. Find the value of x. b. What is the median score? c. Find the probability that a score picked at random is below the mean.
39	Makeba's car uses 8 litres of petrol for every 50km. a. How much petrol does it need for a journey of 325km? b. If one litre of petrol costs sh. 2,900, how much money will he spend on petrol needed to run the car for $1\frac{1}{2}$ hours at a speed of 50km per hour?

40	The graph below shows the changes in body temperature of a patient in a hospital recorded after every two hours in a day. Use it to answer questions that follow. a. That was the highest temperature recorded? b. Find the range in the recorded body temperature. c. Workout the average body temperature of the patient from 3:00pm to 9:00pm.

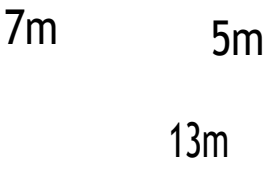
41	A man spends $\frac{1}{3}$ of his salary on food, $\frac{1}{9}$ on clothing, $\frac{1}{6}$ on medical, $\frac{1}{18}$ on house rent and banks the rest which is shs.35,000. a. What fraction of his salary does he bank? b. How much money does he earn as salary?
42	Simplify: a. $n^2 \times n$ b. $m^6 \div m^3$ c. $\frac{a^2 \times a^5}{a^3}$

1	Workout: $\begin{array}{r} 1\ \ 3 \\ +\ 4\ \ 3 \end{array}$	2	What fraction of the circle is shaded?
3	In the Venn diagram below, find n(A∩B).	4	Write 24 in Roman numerals.
5	Simplify: $6y + 4y - 5y$	6	Write in figures: Forty two thousand eight.

7	Using a protractor, measure the angle below.	8	Round off 9.46 to the nearest tenths.

9	Workout: $\frac{4}{7} + \frac{8}{21}$	10	Find the missing number in the factor tree below. 30 2 15 5
11	Change $3\frac{1}{2}$ Kg into grams.	12	Workout: 2 0 0 – 1 1 2
13	A primary seven pupil got the following marks in daily mental work exercises for a week: 7 , 6 , 6 , 7 , 2 , 6 , 8 What was the pupil's modal mark?	14	Arrange the following fractions in order beginning with the biggest: $\frac{1}{4}$, $\frac{2}{3}$, $\frac{3}{5}$

15	Given that set M = {1 , 2 , 4}. How many subsets are in set M?	16	Workout: $^{+}7 - \bar{}4$

17	Workout: $2\frac{1}{2} - \frac{1}{4}$	18	David got a loan of Shs. 500,000 from a bank at a simple interest rate of 20% per annum. What was the interest on the loan after a period of 9 months?
19	Find the area of the figure below.  	20	Primary seven pupils will have a party next week. Find the probability that the party will take place on a day that starts with letter T.
21	Workout: $\begin{array}{r} 1\ 0\ 1_{two} \\ +\ 1\ 1\ 1_{two} \end{array}$	22	The cost of 5 bars of soap is Shs. 5,400. Find the cost of 3 similar bars of soap.

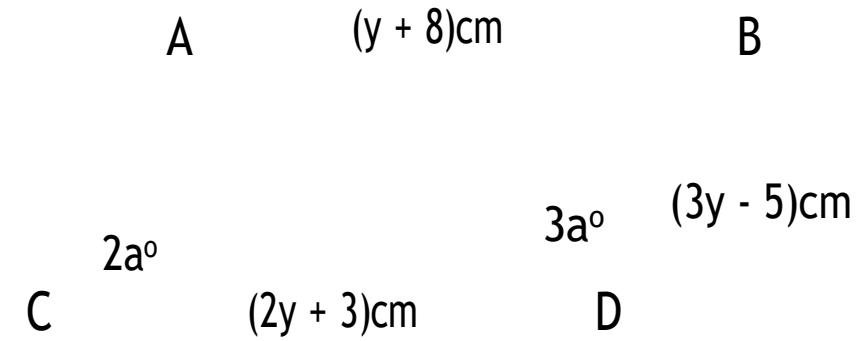
23	Write the next number in the sequence: 1 , 4 , 9 , 16 , ____	24	In the figure below, find the value of n in degrees.
25	How many vertices does the figure below have?	26	A mathematics test was given to a class of 50 pupils and 45 of them passed the test. What percentage of the pupils failed the test?
27	On the graph below, mark point M(¯1 , 4)	28	Solve: $3x - (x + 3) = 3$
29	Solve for x: $3 + 4 = x$ (finite 5)	30	A fisherman saw a boat on water on a bearing of 060°. What was the bearing of the fisherman from the boat?

31	A man sells mangoes in heaps of five and eight. A heap of five mangoes costs 500/= and a heap of eight mangoes costs 1,000/=. He had 12 heaps of five and 14 heaps of eight mangoes. a. How many mangoes did he have altogether? b. How much money did he get after selling all the mangoes?
32	a. Using a ruler, a pencil and a pair of compasses only, construct a triangle PQR in which angle PQR = 30^o, PRQ = 45^o and line QR = 10cm, which is the base of the triangle. b. Measure: PQ = PR = c. Find the perimeter of the triangle PQR.

33 a. Solve for x: $2(x+1)-3(2x-1)=\bar{}3$

b. Find the value of $a^r \div a^x$, given that $a=2, r=5$ and $x=3$

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



a. Find the value of a.

b. Find the size of angle BAC in degrees.

c. Workout the value of y.

35	At a birthday party attended by 40 guests, 18 ate chicken (C) only, 13 ate meat (M) only, x guests ate both chicken and meat and 4 did not eat any of the two dishes. a. Use the information given above to complete the Venn diagram below. $n(\varepsilon)$ = _____ C M 18 x 13 b. Find the value of x. c. How many guests did not eat meat at all?
36	A businessman has 200 bags of maize flour each weighing 50kg. a. Find the total weight of the bags in tonnes. b. If a pickup carries 2 tonnes per trip, workout the number of bags the pick-up will carry in one trip. c. Find the number of trips the pickup will make to transport the whole flour from the milling machine to his shop.

37 On a mixed farm, $\frac{1}{3}$ of the land is used for growing food crops while $\frac{1}{4}$ of the remaining land is for cash crops. The rest of the land is for cattle grazing.

a. What fraction of the land is for cattle grazing?

b. If 15 hectares are used for cash crops, what is the total area of the farm?

38 In a primary school, each pupil [lays only one game. The pupils who play each game are given below:
Use the information to answer the questions that follow.

Game	No. of pupils
Football	55
Basketball	40
Volleyball	45
Tennis	20
Netball	40

a. What percentage of the pupils play netball?

b. If a pupil is picked at random, what is the probability that a pupil plays volleyball?

c. Find the mean number of pupils who play games in the school.

1

39	a. Draw beads to show the number 302 on the abacus below. H T O b. Write 3409 in standard form. c. What is the place value of 4 in the number 240?	
40	Square tiles of side 20cm each were laid on the floor of a room measuring 600cm by 400cm. a. Find the number of tiles needed to cover the floor. b. If a box containing 25 tiles costs shs. 30,000, find the total cost of the tiles needed to cover the whole floor.	
41	a. Solve the inequality: $3(x+4) < 5x - 2$	b. Solve the equation: $2x - 2 = \frac{1}{4}x + 5$

42 The graph below shows the journeys made by Opio and Kato between towns K and L which are 200km apart.
Opio left town K at 7:00am and drove at a steady speed of 50km/hr to town L. Kato left town L at the same time and covered a distance of 60km at a steady speed in an hour. He then rested for $\frac{1}{2}$ an hour after which he drove for $2\frac{1}{2}$ hours to town K.
Use the graph to answer the questions that follow.

a. At what time did Opio and Kato meet?

b. What distance had Opio covered by 9:00am?

c. How far from town L was Opio at 10:00am?

d. Workout Kato's average speed for the journey he covered after resting.

e. Find Kato's average speed for his whole journey.

1	Workout: $60 \div 6$	2	Given that set K = {1 , 2 , 3 , 4 , 5} and set L = {0 , 5 , 7}. Find (K∩L)
3	Simplify: $4k - 3k + k$	4	A meeting started at 9:30am and lasted 50 minutes. At what time did it end?
5	Express 0.3 as a fraction.	6	Arrange the following numbers beginning with the smallest: 3 , 0 , $\bar{1}$, 8 , $\bar{6}$

7	Using a pair of compasses, a ruler and a pencil only, construct an angle of 30^{o}.	8	Abdul bought the following number of goats during the week as follows: Find the range.

9	Write CXC in Hindu-Arabic numerals.	10	If Nandi buys 4 text books for shs. 240,000, how much will 9 similar books cost?
11	Write in words: 3,602	12	The time on the 24-hour clock is 13:42hours. What will it be on the 12-hour clock?
13	Find the next number in the sequence: $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \_\_\_\_\_$	14	A trader got a simple interest of shs. 18,000 after depositing shs. 90,000 in a bank at an interest rate of 10% per annum. For how long was this money in the bank?

15	A taxi carries 14 passengers while a bus carries 29 passengers. If the two vehicles make two journeys each, how many passengers will they carry altogether?	16	Solve the equation: $5t - 2(t + 1) = 1$
17	Change 9 base ten to base two.	18	The base of a cube is $25cm^2$. Calculate the volume of the cube.
19	Solve the inequality: $^{-}2p + 4 > 6$	20	The exterior angle of a regular polygon is 45^0. Find the number of sides the polygon has.
21	The difference between $\frac{1}{5}$ and $\frac{1}{6}$ of a number is 7. Find the number.	22	Find the value of angle W in the figure below.

23	A motorcyclist covered a distance of 42km in $3\frac{1}{2}$ hours. Calculate the average speed of the journey.	24	Study the Venn diagram below carefully and answer the questions that follow. Find n(E∪P)
25	Simplify: $\frac{3}{9} - \frac{1}{18}$	26	Workout: $\frac{0.25 \times 5.4}{0.045}$
27	Find the square root of 1.96	28	Find the area of the shaded part in the figure below. D C 5cm 3cm A B
29	Solve: $5 + n = 3$ (finite 7)	30	Peter scored the following marks in a test: 9 , 8 , 7 and 4. Find Peter's mean score in the test.

31 At a birthday party, 72 guests were invited. 55 were served with sodas (S), y were served with mineral water (M) while 7 did not take any of the two drinks and 17 were served with both drinks.

a. Represent the above information on the Venn diagram.

$n(\varepsilon)$ = _____

n(S) = ____ n(E) = y

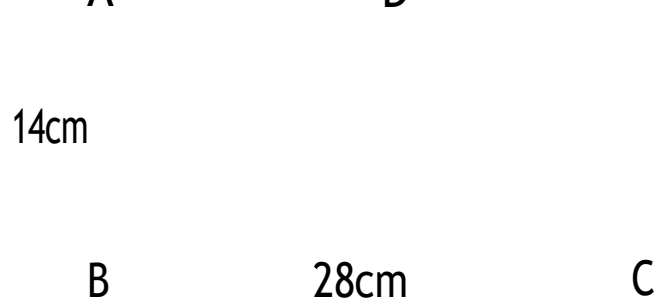
b. Find the value of y.

c. How many guests were served with one drink only?

32 a. Given that $m = 2$ and $y = -3$. Workout: $\frac{2(ym) + 2}{(m - y) - 6}$

b. Barbra is 4 times as old as Mukasa. In 10 years' time, Barbra will be twice as old as Mukasa will be. How old is Barbra and Mukasa now?

33 The figure below is a trapezium where AB = AD = 14cm, BC = 28cm and ABD forms a quarter of a circle. Calculate the area of the shaded part. $(\boldsymbol{use}\ \boldsymbol{\pi} = \frac{22}{7})$



34 The district inspector of schools of a certain district registered 4000 candidates for PLE 2007. Out of these, 30% were girls below 15 years and 25% were boys below 15 years of age. If there were 1,000 girls who were above 15 years of age;

a. Find the number of girls who sat for PLE.

b. Find the number of boys who sat for PLE.

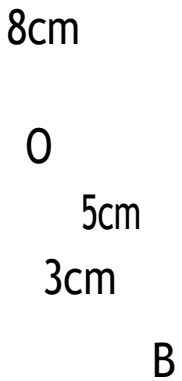
c. How many first grades did the district get if all the candidates below 15 years of age passed in division one?

35 A certain county in Uganda has a population of 300,000 people. Of these, $\frac{3}{5}$ are female and $\frac{5}{6}$ of the females are girls.

a. If $\frac{2}{3}$ of the males among the population are boys, find the ratio of boys to girls.

b. What is the total number of boys and girls in the county?

36 The figure below shows a regular six-sided polygon of sides 8cm long enclosed in a circle of radius 5cm. Triangle OAB of height 3cm is part of the polygon.



a. Find the area of the polygon.

b. Find the area of the shaded region. (*use* $\pi = 3.14$)

37	Write the mathematical statement shown on the number line below.
38	a. Using a pair of compasses, a pencil and ruler only, construct a triangle EFG in which $\bar{\bar{E}}\bar{\bar{F}}$ = 8cm, angle GEF = 60^o and angle EFG = 45^o. From G, drop a perpendicular $\bar{\bar{F}}\bar{\bar{G}}$ to meet $\bar{\bar{E}}\bar{\bar{F}}$ at H. Measure $\bar{\bar{G}}\bar{\bar{H}}$ b. Using $\bar{\bar{G}}\bar{\bar{H}}$ as the height, find the area of triangle EFG.

39 The line graph below shows the temperature of a certain place recorded over a week. Study the graph and answer the questions that follow.

TEMPERATURE GRAPH

a. On which day was the highest temperature recorded?

b. What was the lowest temperature recorded?

c. Find the mean temperature of the given days.

40	The figure below is a cylindrical tank containing 1,540 litres of water. a. Find the radius of the tank. $(use\ \pi = \frac{22}{7})$ b. If the tank is $\frac{4}{5}$ full, find its capacity.
41	In the diagram below, CAB is a triangle and DCA a straight line. Study it and answer the questions below. a. What is the value of y? b. What is the size of angle ACB?

42 A ship left Port Bell for Kisumu on a bearing of 090^{o}. It sailed for 120km then changed its course and sailed on a bearing 130^{o} for 90km before reaching Kisumu.

a. Draw a sketch diagram of the journey.

b. Using a scale 1cm=20km, draw an accurate diagram of the whole journey.

c. What is the bearing of Kisumu from Port Bell?

1	Workout: $\begin{array}{rr} & 43 \\ \times & 2 \end{array}$	2	Write in figures: One thousand, thirteen.
3	Simplify: $6x - 5m + 3m - 4x$	4	Workout: $t^6 \div t^2$
5	Solve: $3 - x = 2x$	6	Simplify: $^{-}5 - {}^{+}5$

7	Write 99 in Roman numerals.	8	Find the value of y in the figure below.

9	Find the next number in the sequence: 2 , 5 , 7 , 10 , 12 , _____	10	Using a ruler, a pencil and a pair of compasses only, construct an angle of 90^o in the space provided below.
11	Express 36 as a percentage of 80.	12	Find the median of the following numbers: 3 , 0 , 5 , 4 , 2
13	Given that $x = 3, y = 4$ and $z = 6$, find the value of $\frac{xy}{z}$	14	Change 12,400 metres to kilometres

15	The radius of a wheel of a bicycle is 35cm. find the circumference of the wheel. $(use\ \pi = \frac{22}{7})$	16	Change 11010_{two} to base ten.
17	Find the sum of the values of the digits 3 and 5 in the number 3958.	18	The first half of a football match ended at5:25p.m after being played for 45 minutes. At what time did the match start?
19	In the diagram below, shade the region that represents only the members of set B. A B	20	Simplify: $\frac{0.12 - 0.06}{0.06}$
21	Find the square root of $5\frac{4}{9}$	22	James sold a cow at sh. 320,000. If he made a profit of sh. 80,000, find the price at which he bought the cow.

23	Find the value of x in the figure below. 28^o $2x^o$	24	Workout: $1\frac{1}{12} - \frac{5}{6}$
25	The total number of black and blue pens in the bag is 12. If the probability of picking a blue pen from the bag is $\frac{2}{3}$, how many black pens are in the bag?	26	How many lines of symmetry does a rectangle given below have?
27	Maria has a bundle of five thousand shilling notes numbered consecutively from AP534201 to AP534300. How much money does she have?	28	Use the graph below to answer the question that follows. P Write the coordinates of point P.

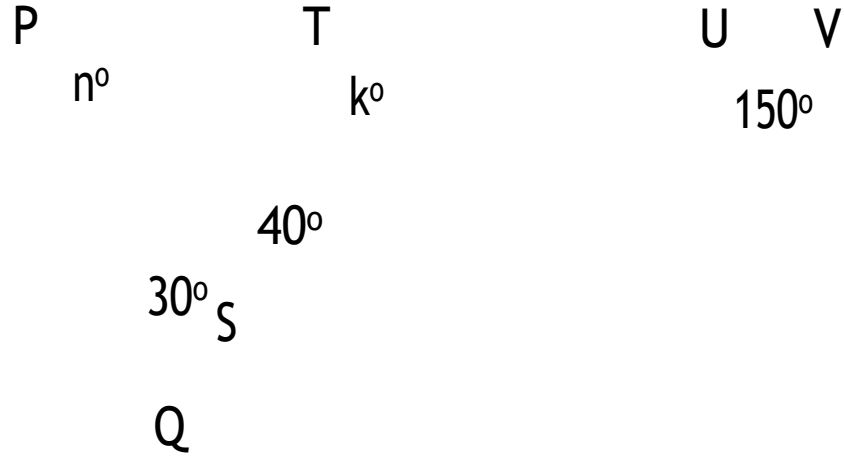
29	Solve the inequality: $1 + \frac{1}{2}x > 2$	30	A bank gives a simple interest rate of 12% per annum. What will be the interest on sh. 400,000 banked for 9 months?

31	In a class of 30 students, 20 play volleyball (V), 15 play football (F), (x) play both volleyball and football and 2 do not play any of the two games. a. Use the information given above to complete the Venn diagram below. $n(\varepsilon) = 30$ V F x 2 b. Find the value of x. c. Find the number of students who play only one game.
32	Kaliso's poultry produces 3,000 eggs in a day. If the eggs are packed in trays of 30 eggs each, how many trays of eggs does he produce in a week?

33	a. Using a ruler, a pencil and a pair of compasses only, construct a parallelogram KLM in which $\bar{\bar{KL}}$ = 4cm, $\bar{\bar{LM}}$ = 6cm and angle NKL = 60^o. b. Measure the length of diagonal KM.
34	Betty was given sh. 20,000 to buy things to take to school and she bought the following; ➢ 3 dozens of exercise books at sh. 2,800 per dozen. ➢ 4 bars of washing soap at sh. 900 per bar. ➢ 4 tablets of washing soap at sh. 1,200 per tablet. ➢ 2 tubes of toothpaste at sh. 800 per tube. a. How much money did she spend altogether? b. How much money did she remain with?

35	Kato wrote three digit numbers using the digits 1, 3 and 6. a. Write down all the possible three digit numbers greater than 300 that Kato wrote. b. What was the probability of Kato writing an even number?
36	Milk was mixed with water to make tea. If 14 litres of milk was used and this was 40% more than the amount of water in the tea, how much tea was prepared?
37	a. Given that $\frac{2}{3}$ of Peter's salary is equal to $\frac{3}{4}$ of Mary's salary, find Peter's salary if Mary's salary is sh. 120,000. b. Express Mary's salary as a fraction of Peter's salary.

38 In the diagram below, PTUV is a straight line, angle TSU = 40°, angle SUV = 150° and angle PQT = 30°. Use the given information to find the value of each of the angles marked k and n.



39 a. Solve: $\frac{1}{2}m + 7 = 2m - 2$

b. Solve: $\frac{10}{n} + 4 = 24$

40 a. Workout: $\frac{2.7 \times 4.8}{2.4 \times 3.6}$

b. Simplify: $1\frac{1}{6} \times 1\frac{1}{7} \div 2\frac{1}{3}$

41	The diagram below shows a metallic drum which was cut open to form a door sheet. Use it to answer the questions that follow. 80cm 63cm a. Find the length of the door, which was made out of the sheet. $(use\ \pi = \frac{22}{7})$ b. Workout the area of the door in metres.
42	Mutono left town X at 8:00a.m and drove at 90km per hour for one hour to town Y. He rested for half an hour at town Y. He left town Y and drove for one hour at 70km per hour to town Z. He rested for half an hour at town Z. He then left town Z and drove back to town X at a steady speed of 40km per hour. a. Draw Mutono's journey on the graph provided below. (see next page)

b. Workout Mutono's average speed for the whole journey.

1	Workout: $\begin{array}{r} 5\ \ 6 \\ -\ 4\ \ 5 \end{array}$	2	Write in figures: One thousand, one
3	Simplify: $m + 2m + 3m$	4	Workout: $\frac{2}{3} \times \frac{9}{10}$
5	Round off 23.47 to the nearest whole number.	6	Write 29 in Roman numerals.

A

15	The area of a square room is $12\frac{1}{4}\ m^2$. Find the length of one of its sides.	16	A basket contains 3 bad eggs and 6 good ones. If the eggs in the basket are mixed, what is the probability of picking a bad egg from the basket?
17	A baby slept at 8:30am. If the baby slept for 2 hours and 45 minutes, at what time did the baby wake up?	18	Use the figure to write the Mathematical statement shown. $^{-}3\ ^{-}2\ ^{-}1\ 0\ 1\ 2\ 3\ 4\ 5\ 6$
19	Use the Venn diagram below to find the value of x. $n(\varepsilon) = 20$ M N x 5 9 2	20	Find the perimeter of the figure below. 13m 5m 9m 6m 4m

21	Given that set A = {0, 1, 2, 3, 5, 7} And set B ={0, 4, 6, 7, 9}, find n(A∩B)	22	Abdul is x years old. He is 5 years younger than Madina. How old is Madina?
23	Given that $a = \bar{6}, b = 3, c = \bar{2}$ and $d = 1$. Find: $\frac{ad}{bc}$	24	Using a ruler, a pencil and a pair of compasses only, construct an angle of 120^o in the space provided below.
25	If 4 books cost sh. 36,000, how much will 6 books of the same type cost?	26	The figure below is an isosceles triangle. Find the size of angle x. 40^o x^o

27	Find the difference between the value of 9 and the place value of 7 in the number 9473.	28	In a school of 600 pupils, the ratio of boys to girls is 1: 2. What is the number of girls in the school?
29	Mary deposited sh. 60,000 in a bank which gives a simple interest rate of 7% per year. Find her interest after 6 months.	30	The price of a shirt was increased by 10%. If the new price is sh. 44,000, find the old price.

31 In a Primary seven class of 50 pupils, 27 like mathematics (M), 22 like science (S), x pupils like both mathematics and science and 3 pupils do not like any of the two subjects.

a. Represent the above information on a Venn diagram given below.

$n(\varepsilon) = 50$

M S

x

b. Find the number of pupils who like only one subject.

32	Jane bought the following items from the market. ➢ 3kg of sugar at shs. 1,400 per kg. ➢ $1\frac{1}{2}$ kg of rice at shs. 1,200 per kg. ➢ $1\frac{1}{2}$ litres of paraffin at shs. 900 per litre. ➢ 8 oranges at shs. 50 per orange. If Jane remained with only shs. 250, find the total amount of money she had at first.
33	A primary school has a population of 1,080 pupils. Of these, $\frac{3}{4}$ are girls and $\frac{1}{5}$ of the boys are in upper primary classes. a. Find the total number of boys in upper primary classes. b. Express the number of boys in lower primary classes as a percentage of the whole school population.
34	A milk seller has 36 litres of milk. He sells milk using a container measuring 6cm by 10cm by 6cm at shs. 150 per full container. How much money does he get after selling all the milk?

35 John and his young daughter travelled from Kampala to Nairobi by bus. John paid K.shs. 1,500 and the daughter paid K.shs. 750.
The exchange rate was: 1 Kenya shilling (K.shs.) = 24 Uganda shillings (U.shs.)

a. Workout the bus fare in Uganda shillings which each of them paid.

b. If John had Ug. Shs. 102,000 at the beginning of the journey, what was his balance in Kenya shillings after paying the bus fares for himself and the daughter?

36 The figure below shows a semi-circle enclosed in a rectangle. Use it to answer the questions that follow.

14cm

a. Find the area of the rectangle.

b. Workout the area of the un-shaded part. $(use\ \pi = \frac{22}{7})$

37	The head teacher drove from school to town P for 3 hours at a steady speed of 60km per hour. He left town P at 11 a.m and drove back to school along the same road at a steady speed of 90km per hour. a. At what time did the head teacher arrive at the school? b. Workout the head teacher's average speed for the whole journey.
38	Three pupils are aged (2x + 5), (3x - 10) and (x + 3) years. Their total age is 34 years. a. Find the value of x. b. How old is the youngest pupil?
39	a. Solve: $\frac{m+2}{2} = \frac{4m-4}{11}$
	b. Solve: $\frac{2x+4}{5} - 6 = 0$

40 The bearing of town B from town A is 120^{o} and town B is 4 km from A. The bearing of town C from B is 60^{o} and town C is 5 km from B.

a. Draw an accurate diagram showing the three towns. (Use a scale of: 1cm = 1km)

b. Find the shortest distance between town A and C in kilometres.

41	a. Using a ruler, a pencil and a pair of compasses only, construct a triangle KLM in which KM = 6.5cm, angle KML = 45^{o} and angle LKM = 60^{o}.
	b. Measure ML

42	The Pie chart below shows how Kalinda spends his monthly salary. a. If he spends shs. 15,000 on rent, find his salary. a. Workout the amount of money he spends on; i. Food ii. Medical care

PUPIL'S NOTES AND CORRECTIONS