THE DREAM EDUCATION CONCERN

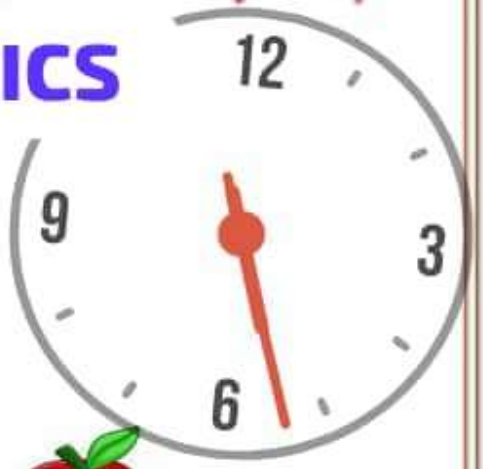
"Quest for excellence"

PRE-PRIMARY LEAVING EXAMINATION

SET FOUR 2024

OFFICIAL MARKING GUIDE
FOR

MATHEMATICS



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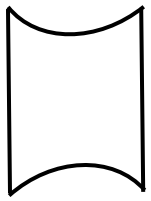
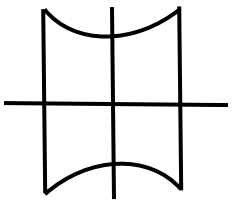
FOR ALL EXAMINATIONS FROM BABY TO P.7

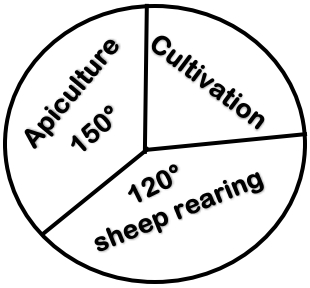
TURN OVER

SECTION A (40 MARKS)

1	**Work out the sum of 390 and 72** **Solution process** Arrange the digits vertically as below. **Note:** sum means addition so we are to add. Always put the bigger digit Up and the small one down for proper addition 390 +72 462	2	**Simplify m + 2m + 3m** **Solution process** M + 2m +3m Since the items are same, no collection of like terms M + 2m + 3m =6m
3	**Divide 3816648 by 132** **Solution process** 28914 132√3 8 1 6 6 4 8 -2 6 4 1 1 7 6 1 0 5 6 1 2 0 6 1 1 8 8 1 8 4 1 3 2 5 2 8 -5 2 8 - - - Make sure the figures are arrange d in straight line so as borrowed digits are added on the number to be divided for proper division.	4	**Find the complement of the angle of 25°** **Solution process** Since all complementary angles add up to 90°, we shall subtract 25° form 90° Arrange = 90° - 25° Arrange vertically = 90° -24° 6 5°
5	**Work out $3\frac{5}{6} - 1\frac{4}{5}$** **Solution process** Convert mixed numbers to improper fraction using the formular below. $\frac{D \times W + N}{D} - \frac{D \times W + N}{D}$ Where D stands for Denominator	6	**Find the next number in the sequence 125, 64, 27, 8, _____** **Solution process** Step 1.When observed the number in the sequence these are perfect cubs $5^3, 4^3, 3^3, 2^3$ Step 2. continue the pattern by decreasing the base number by 1 then the next base is 1

	W stands for Whole number N stands for Numerator $\frac{D \times W + N}{D} - \frac{D \times W + N}{D}$ $\frac{(6 \times 3 + 5)}{6} - \frac{(5 \times 1 + 4)}{6}$ $\frac{(18 + 5)}{6} - \frac{(9)}{6}$ $\frac{23}{6} - \frac{9}{6} = \frac{23 - 9}{6} = \frac{14}{6}$ $\frac{14}{6}$ $2^2/_6$ $=2^2/_6$		Step 3. Calculate the cub of the next number $1^3 = 1$ Therefore, the sequence will look like 125, 65, 27, 8, 1 5^3 4^3 3^3 2^3 1^3 **Note:** The relationship between the number is that they are cubed in descending order from 5, 4, 3, 2. meaning that 1 must be the next sum.
7	If 20% of a number is 40, what is the number? Solution process Let the number be y 20% of Y = 40 $\frac{20}{100} \times Y = 40$ $\frac{1}{5} \times Y = 40$ $\frac{Y}{5} = \frac{40}{1}$ Y x 1 = 40 x 5 Y = 200	8	Moses bought 4 packets of sugar and each packet was weighing 750grams. find the weight of sugar Moses bought. Solution process This calls for the knowledge Length, Capacity and Mass Step 1. 1kg = 1000g $\frac{750 \times 4}{1000}$ Step 2. 750grams x 4 3000grams 1000g = 1kg 3000g = $\frac{(300)}{1000}$ kg = 3kg Step 3. 1000g = 1kg 1g = $\frac{1}{1000}$kg 1g = ($\frac{1}{1000}$ x 750) kg 750 = ($\frac{1}{1000}$ x 750) kg 1 packet = $\frac{3}{4}$kg 4packets = $\frac{3}{\cancel{4}} \times \cancel{4}$ = 3kg Step 4. 1000g = 11 750g = $\frac{7}{100}$

			= 0.75kg x 4 3.00kg Moses bought 3.00kg
9	Add using 6 + 7= _____ (finite 9) Solution process 6 + 7 = _____(finite 9) 13 ÷ 9 = 1 rem 4 (finite 9) therefore 6+ 7 = 4 (finite 9)	10	Calculate the interior angle sum of a regular polygon with 7 sides. Solution process Interior angle sum = 180° (n – 2) 180° (7 – 2) 180° x 5 = 900
11	Given that 1 US dollar ($) costs Ugandan shillings 3672 and 1 Kenyan shilling costs 36. Find the cost of US dollar in Kenyan shillings. Solution process Ug sh. = 3672 K sh. 36 102 Kenyan shillings 1 US $ = sh. 102 Ug sh. K sh. 36 1 = 1 36 Ug sh. 3672 = 1 x 3672 (102) 36 (1) = 102K sh. 3672 ÷ 36 K sh. 102	12	Show all the lines of folding symmetry in the figure below.  Solution process 
13	The pie chart below shows how Muyama uses her farm land. use it to answer the questions that follows.	14	Find the value of M in degrees in the diagram below.



Calculate the size of Mayama's land if she uses 72 acres for sheep rearing

Solution process

Let the size of the whole farm land be y

$\frac{120}{360}$ of y = 72acres

$\frac{120}{360}$ x Y = 72acres

$\frac{1}{3} \times \frac{1}{3}$ y = 72acres x 3

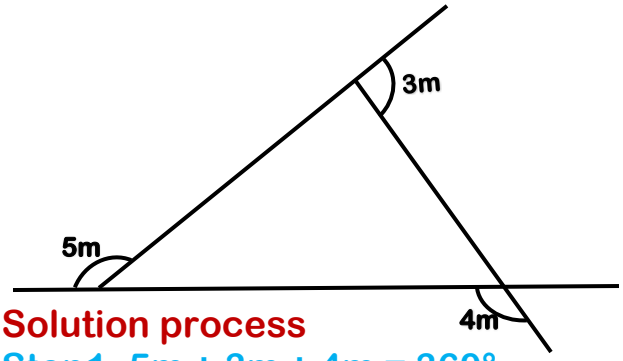
Y = 216acres

Hints (a) we picked 120° because it is what was given to the portion of sheep rearing

(b) We used 360° because the pie chart is a circle and a circle adds up to 360°

(c) we equated the whole of our calculation to 72acres, simply because it was the coverage of the given sheep rearing portion

Note: The teacher should explain this to learners clearly



Solution process

Step1. 5m + 3m + 4m = 360°

Note we shall equate it to 360° because its a circle and all circles are equated to 360°

Step 2. Sum up all the digits

5m + 3m +4m = 360°

$\frac{12m}{12} = \frac{360°}{12}$

Hint we divide by 12 because it is on side of the unknown, so we are to divide 2 on both sides as below

$\frac{12}{12} = \frac{360°}{12}$

M = 30°

OR

180°-5m+180°-3m + 180° -4m = 180°

(180° x 3) – 5m – 3m -4m = 180°

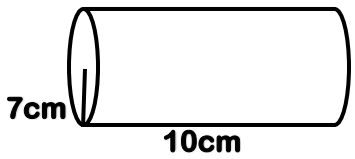
540° – 2m = 180°

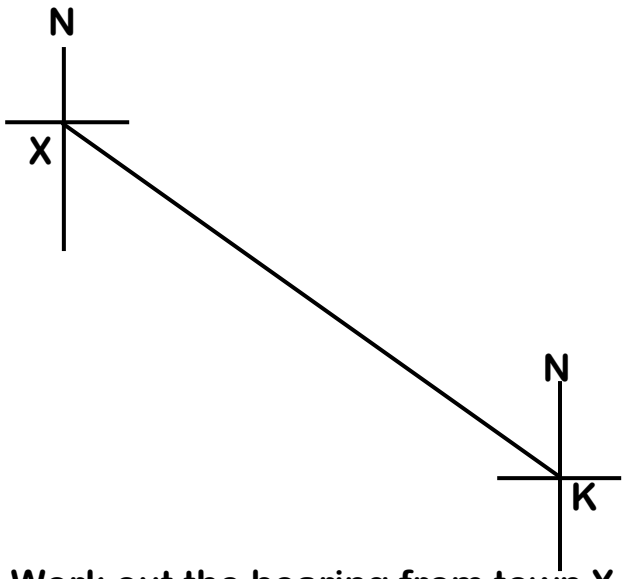
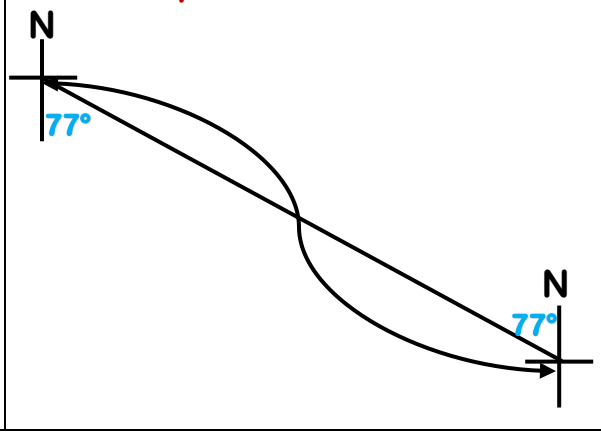
540° - 540° - 12m = 180° - 540°

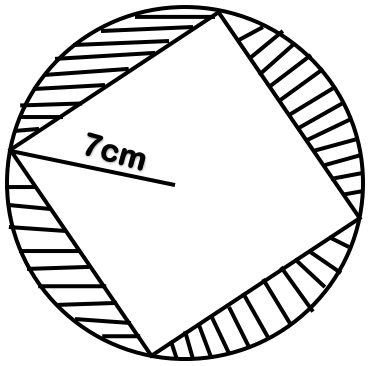
$\frac{12m}{12_1} = \frac{360^{30}}{12_1}$ } total sum of a circle

} digit on the unknown

M = 30°

15	**Find the percentage profit on a phone bought at sh. 10,000 and sold at sh. 12000.** **Solution process** Percentage profit = $\frac{\text{profit}}{\text{c.p (cost price}} \times 100\%$ let us first find the profit profit = spx - bpx where Bpx means buying price Spx means selling price Arrange vertically	16	**Find the volume of the cylinder below**  **Solution process** Volume of a cylinder = πr^2 Volume = $\pi r^2 \times H$ $\frac{22}{7} \times 7 \times 7 \times 10$

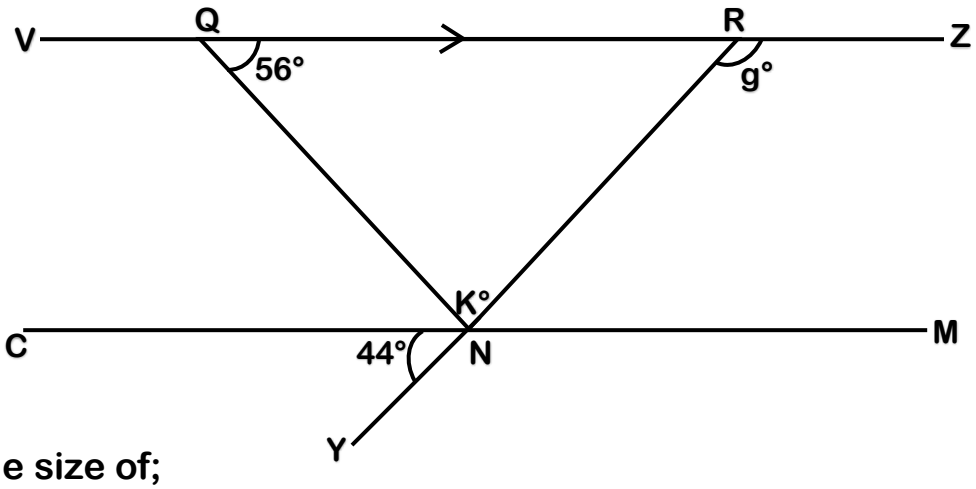
	12000 selling price -10000 buying price 2000 So percentage profit =profit x 100 Cp Profit = (2000 x 100%) 10,000} buying price 2000 x 100% 10000 2000 100 = 20% The percentage profit is 20%		Volume = (22 x 7) x 10cm Volume = 1540cm^3
17	The diagram below shows the position of two towns X and K, use it to answer the questions that follows.  Work out the bearing from town X to town K Solution process 	18	A garden can be dug by 3 men in 20 days. How many men working at the same rate can dig the same garden in 12 days? Solution process One day needs 3men (1d=3x20) men Days Men 20 3 3 x 20 1 5 3 x 20 12 Therefore, 12days need 5men

	Step 2. get the total sum of a circle which is 360° and take away 77° which we got after drawing on bearing 360° -77° 283 So the bearing from town X to town K is 283°		
19	Solve and write the solution set of X 4x > 20 Solution process Note: when dividing a negative by co-efficient, the sign changes at the step of division 4x > 20 $\frac{\cancel{4}^{1}x}{\cancel{4}_{1}} > \frac{\cancel{20}^{5}}{\cancel{4}_{1}}$ X > 5 X = {6, 7, 8, 9, 10, ...} So the solution set of X is as below. X = {6, 7, 8, 9, 10, ...}	20	Study the figure below and answer the questions below.  Find the area of the shades part. Solution process Square Diagonal = 7cm + 7cm = 14cm A = ½ x d_1 x d_2 A = $\frac{1}{\cancel{2}_{1}} \times \cancel{14}^{7}$cm x 14cm A = 7cm x 14cm A = 98cm² But area of circle = $\frac{22}{7}$ x 7cm x 7cm = $\frac{22}{\cancel{7}_{1}} \times \cancel{7}$cm x 7cm (22 x 1 x 7) cm = 154cm² Area of shaded part = outer area- inner area Outer area = 154cm² Iner area = 98cm² Arrange vertically for proper subtraction

			154 -98 56cm² The area of the shaded part is 56cm²

SECTION B (60 MARKS)

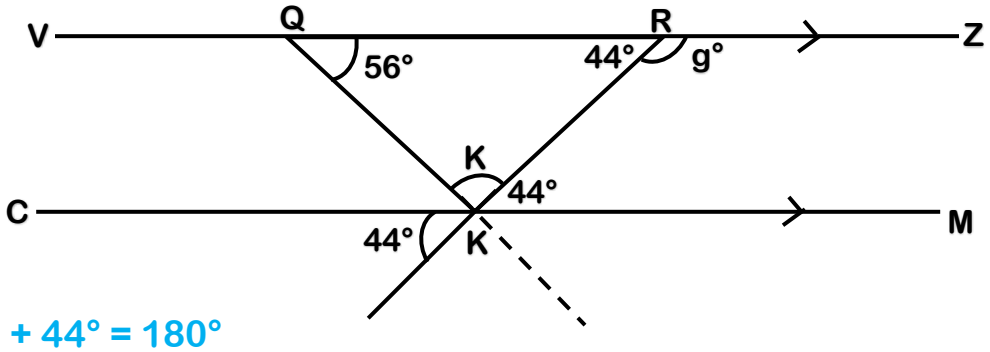
21	In a figure below line VZ is parallel to CM. angle CNY = 44° and angle NQR = 56°. Study it carefully and answer the questions that follows.



(a) Find the size of;

(i) Angle K

Solution process



K + 56° + 44° = 180°

K + 100° = 180°

K + 100° - 100° = 180° - 100°

K = 80°

OR

K + 44° = 124°

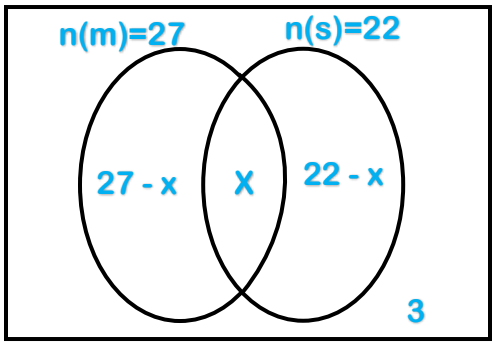
K + 44° - 44° = 124° - 44°

K = 80°

(b) Angle size of g.

Solution process

g + 44° = 180° (con. int. Ls)

	g + 44° - 44° = 180° - 44° g = 136° OR g = k + 56° g = 80° + 56° g = 136°
22	In a primary four 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 in a Venn diagram. Solution process £ = 50  (b) Find the value of x. Solution process 27 – X + X + 22 (27X – X) + X(22 – X) – 35 = 50 52 – X = 50 X = 2 (c) Find the number of pupils who like only one subject. Solution process Let's add those who like mathematics (only) to those who like science only as in symbolic expression below (M only + S only) (27 – X) + (22 – X) Pupils who like only one subject (27 – 2) + (22 – 2) 25 + 20 = 45 = 45pupils Therefore, there were 45pupils who liked only one subject
23	Nampima went to the market with sh. 30,000. she bought the items as shown in the table below. if after paying for all the items, she remained with sh.9250. Complete the table by showing your working aside.

ITEMS	UNIT COST	TOTAL COST
2kg of salt	Sh. 4000 per kg	Sh. 8000
3 loaves of bread	Sh. 3500 per loaf	Sh. 10,500
1½ litres of milk	Sh. 1500 per litre	Sh. 2550
TOTAL EXPENDITURE		Sh. 20.750

Working

Solution process

(i) To get the total cost of sugar, we shall multiply the quantity (2) by the unit cost (4000/= as below

4000
x 2
Sh.8000

Note: When changing from small unit to big unit we multiply as done above

(ii) Milk = Since we are changing from a big unit to a small unit, we shall divide the total cost (2550) by the unit cost (1500) as below.

(2550) = 1½ OR 1.5
150
1½ litres of milk

Bread

(iii) Since the cost of bread was not given, we shall sum up (add) the total cost of sugar (8000) and milk (2250) as below

Sh. 8000
+ Sh. 2250
Sh. 10,250

The total cost of two items was 10,250. so to get total cost of bread, we shall subtract 10,250 for two items from total cost (20750) as below

20750
-10250
10,500/=

(iv) So to get unit cost of bread we shall divide the total cost of bread by the unit cost because to change big unit to small, we divide as below

(10500) = 3500
3

(v) To get total expenditure, we shall just add all the total cost of the tree items as below.

Sugar sh. 8000
Milk sh. 2250
Bread sh.10,500

	Total expenditure = Sh. 20,750 (vi) To prove our answer, we shall get what was spent and subtract from the original money that she went with to the market to see if we can get the change that she came back with from the market as below Original amount sh. 30,000 Expenditure sh. 20,750 Sh. 9,250 So, our answers are all correct
24	**The number of goats, cows and sheep in Namukose's farm are in a ratio of 4 : 3 : 5 respectively. There are 40 more sheep than goats. Calculate the number of each type of animal on the farm.** **Solution process** **Note:** The word "respectively" means that ratios are for the items following the order meaning the first ratio goes with the first item and continues currently as symbolically below Goats : Cows : Sheep 4 : 3 : 5 G : C : S 4 : 3 : 5 Note: Now part of animal given was 40. let's first sum up the ration to get its total G : 4 C : 3 S : 5 12 (Total ratio for all the three groups of animals. 1part – 40animals Goat 4 x 40 = 160goats Cows 3 x 40 = 120cows Sheep 5 x 40 = 200sheep 480 total animals **Method 2** (i) Goats = $\frac{\cancel{4}^{1}}{\cancel{12}_{3}} \times 480 = \frac{\cancel{480}}{\cancel{3}}$ Goats were 160 (ii) Cows = $\frac{\cancel{3}^{1}}{\cancel{12}_{4}} \times 480 = \frac{\cancel{480}}{\cancel{4}}$ Cows were 120 (iii) Sheep = $\frac{5}{12} \times 480 = \frac{\cancel{2400}^{200}}{\cancel{12}_{1}}$ Sheep were 200
25	**Babirye deposited sh. 750,000in centenary bank which offers a simple interest rate of 18% per year, after some time, Babirye had risen to sh. 885,000in her bank account.**

(a) Find the interest Babirye earned.

Solution process

Simple interest (SI) + Principle (P) = amount

S.I + P = Amount

S.I + 750,000 = 885,000

Arrange vertically

S.I = 885,000

- 750,000

135,000/=

So, the interest rate earned by Babirye was sh.135,000

Note

S.I stands for Simple interest

P stands for Principle

(b) Calculate the length of the period Babirye's money was in centenary bank.

Solution process

Principle x $\frac{\text{Rate}}{100}$ x Time

$P \times \frac{R}{100} \times T = I$

Where P (Principle) R (Rate), T (Time), I (Interest)

$P \times \frac{R}{100} \times T = I$

Sh. $750,\cancel{000} \times \frac{18}{\cancel{100}} \times T$ = Sh. 135,000

Sh. 7500 x 18 x T = sh. 135,000

Here we are to divide both sides by 135,000 because it has the unknown that we are looking for which is (T) time as below.

$\text{Sh.}\frac{\overset{1}{\cancel{135,000T}}}{\cancel{135,000}} = \frac{\overset{1}{\cancel{135,000}}}{\cancel{135,000}}$

T = 1year

Therefore, Babirye's money was in the bank for 1year.

26 The table below was taken from Kirinya junior school showing marks obtained by some pupils in primary four in a mathematics midterm exam. Study it carefully and answers questions that follows

MARKS	70	Y	60	40
NUMBER OF PUPILS	3	6	3	2

If the mean mark of the pupils was 55, Find the value of Y

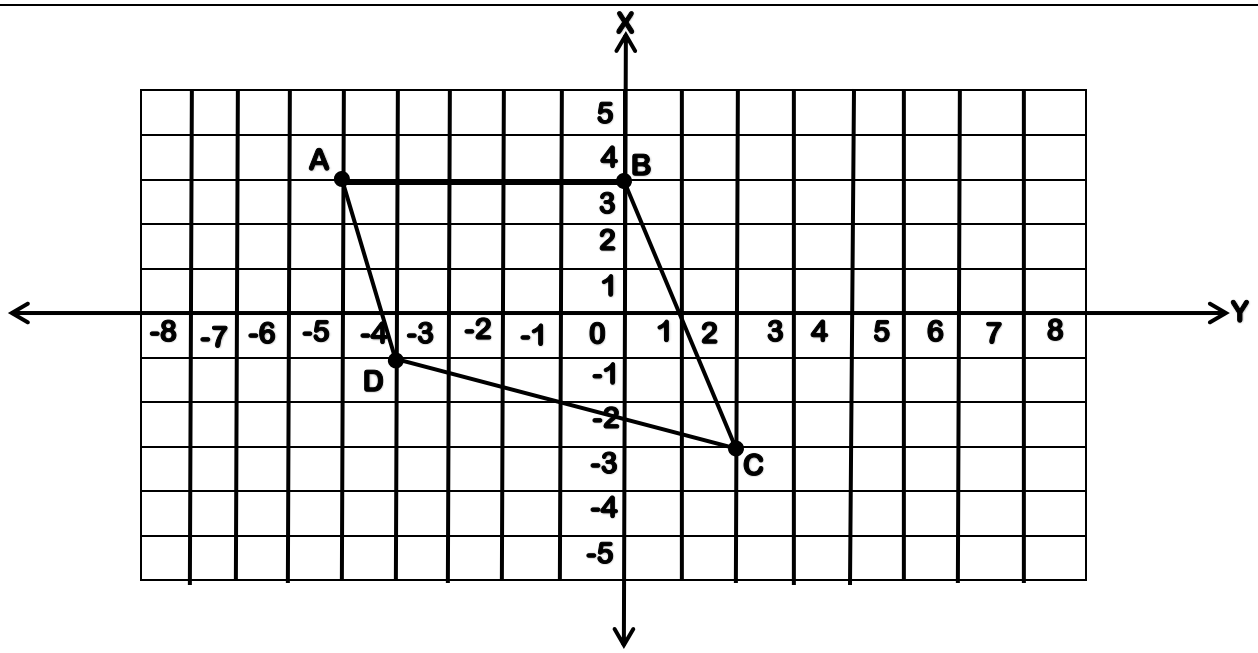
Solution process

(40 x 2) + (y x 6) + (60 x 3) + (70 x 3)

(40 x 2) + (m x 6) + (60 x 3) + (70 x 3) = 55

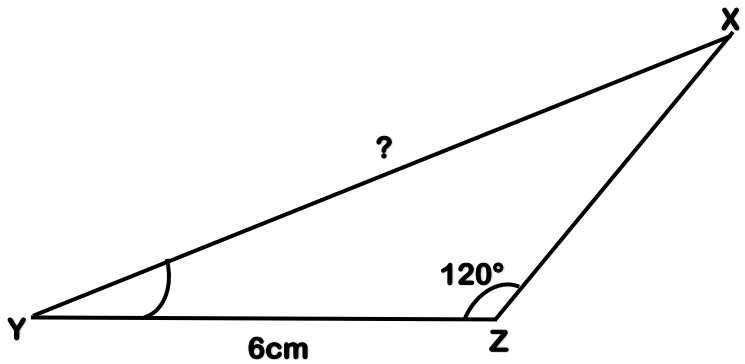
(3 + 6 + 3 + 3) = 14 (Number of pupils)

	Note: We are now going to add the sum of pupils following the marks gained after multiply the marks with number of the pupils who got particular marks as below. (40) was scored by 2pupils (40 x 2) = 80 6 x Y = 6Y (60) was scored by 3 pupils (60 x 3) = 180 (70) was scored by 3 pupils (70 x 3) = 210 Now arrange as below and divide by the number of pupils in the class and equate to mean $\frac{(80 + 6Y + 180 + 210)}{14} = 55$ $\frac{(80 + 6Y + 180 + 210)}{14} = 55$ $\frac{(6Y + 470)}{14} = 55$ **Note:** Please here multiply both sides by 14 to remove that 14 down. $\frac{(6Y + 470)}{14} = 55$ $6Y + 470 = 55 \times 14$ $14 \times \frac{(6Y + 470)}{14} = 55 \times 14$ $6Y + 470 - 470 = 770 - 470$ $\frac{6y}{6} = \frac{300}{6}$ $Y = 50$
27	**Study the graph below and answer the questions that follow.**

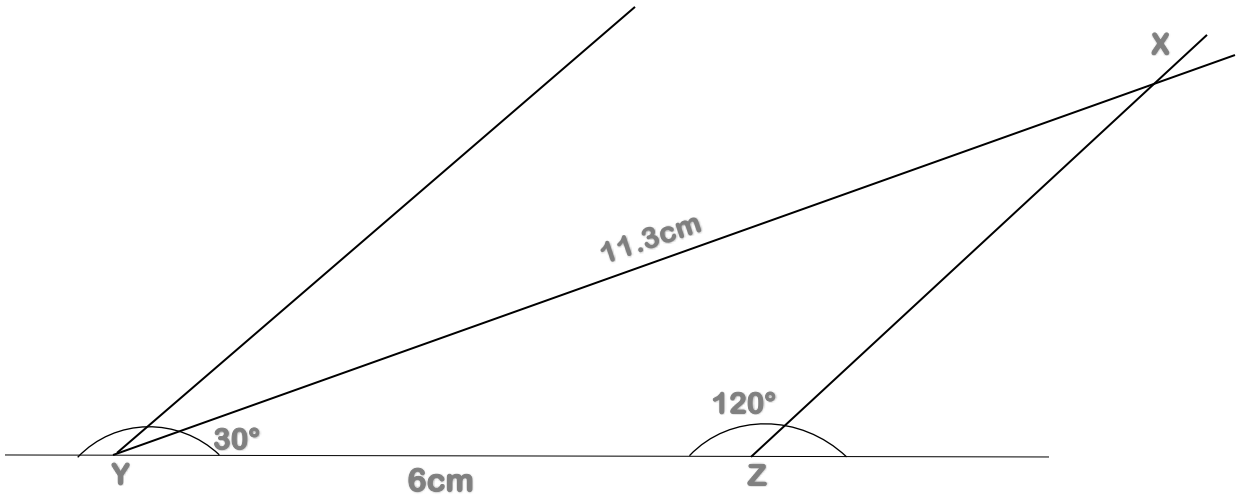


(a) Plot the points
A(-4, 3) B(0,3) C(2, -3) D(-4, -1)
(b) Join point A to B, B to C, C to D, D to A.
(c) Name the figure formed.
It is a kite
(d) Find the area of the quadrilateral in C above.
Solution process
Area of ABCD =(½ x AD x CF) x 2
=½ x 4 x 6 x 2
= 48
2
24square units

28 Using a pair of compasses, a ruler and a pencil only, construct a triangle XYZ in which YZ = 6cm, angle XYZ =30° and angle YZX = 120°
Measure XY
Solution process
Sketch



Step 1. measure off 6cmon the horizontal plane to form line YZ

	Step 2. at Y, construct angle of 30° got by dissecting an angle of 60° ie at Y construct a semi circle and with out changing the compass radius, create an arc on the semi circle from point at which it meets line YZ Step 3. at point Z, construct a semi circle use of the same radius and at the point at which the semi circle touches the remainder of the line out side point Z, construct an arc on the semi circle. Draw a line through the point of intersection between the semi circle and the new arc to obtain an extended angle of 60°. The internal angle YZX will be 120° **Accurate** 
29	**Humphrey bought a primary six Dream text book at sh. 1500. The original price was sh. 2000. Work out the percentage discount.** **Solution process** Discount = selling price – cost price Sh.2000 – 1500 Discount = sh. 500 So, percentage discount will equal to $\frac{(500 \times 100\%)}{2000}$ To get percentage discount, we shall have discount multiplied by 100% and divided by the original price (sh. 2000) as below $\frac{500}{2000} \times 100\% = \frac{50^{25}}{2_1}$ Percentage discount given to Humphrey was 25% **(b) If Humphrey was allowed the same percentage of discount, on a primary seven question bank from the Dream publishers which was priced at sh. 5,000. How much did he pay for it?** **Solution process** Since our discount above was 25%, we are to bring it down since we are told that the same percentage discount was offered which was (25%)

	25 x $\frac{5000}{100}$ = 1,250 Actual discount Cost = 5000 – 1250 = 3750 He paid sh. 3750 for the question bank
30	Divine nursery and primary school has a population of 1080 students. Of these $\frac{3}{5}$ are girls and ¼ of the boys are in upper primary classes. (a) Find the number of boys in the upper primary classes. Solution process Step 1. find the actual number of pupils according to gender (boys) and (girls) first If $\frac{3}{5}$ are girls, then boys will be $(\frac{5}{5}) - (\frac{3}{5}) = \frac{5-3}{5} = (\frac{2}{5})$ boys Actual number of boys $\frac{2}{5}$ of 1080 = $\frac{2}{5}$ x 1080 $(\frac{2160}{5}^{432})$ Therefore, the number of boys in upper primary is 432 (b) Express the number of boys as in lower primary as a percentage of the whole school. Solution process Number of boys in lower primary = total school boys – upper primary boys = 432 – 180 = 324 boys in lower primary Percentage of boys in lower primary as of the whole school population $\frac{324 \times 100\%}{1080}$ $(\frac{3240}{108})$ =30%
31	Dream school bus left Mukono at 11:30am moving at a speed of 60km/hr reached Kayunga town at 1:30pm. The bus stayed in Kayunga town for 40minutes It then continued to Kasawo and covered a distance of 96km at a speed of 64km/hr. (a)Calculate the total distance covered by Dream school bus from Mukono to Kasawo. Solution process Time from Mukono to Kayunga 11:30 – 12:30 1hr 12:30 – 1:30 1hr

2hrs
Distance from Mukono to Kayunga
60km x 2hrs
216km
Note: From the first destination to the second destination, it took one hour, it rested for 40minutes and later continued another full hour meaning (1+1) = 2hrs as shown above in the first statement just immediately after solution process ie (from 11:30 to 1:30h)=2hrs.
So, since it moved at 60km, we shall multiply the two hours by the speed to get distance
Distance = speed x time= 60km x 2hrs
= 216km

(b) At what time did the Dream school bus reach Kasawo town?

Solution process

Total time

$2\text{hrs} + \frac{2}{3}\text{hrs} + 1\frac{1}{2}\text{hrs}$

$2 + 1 + \frac{2}{3} + \frac{2}{3}\text{hrs}$

$\frac{3 + (1 \times 3) + (2 \times 2)}{6}$

$3 + \frac{3 + 4}{6} = \frac{3 + 7}{6} = 3 + \frac{11}{6}$

Time (resting 40mins)

$\frac{40\text{mins}}{60}$

$= \frac{2}{3}$ hrs

Time from Kayunga town to Kasawo

~~24~~ 6 3
~~48~~
~~96~~ distance
~~64~~ speed
~~32~~
~~16~~
~~4~~
2

$= \frac{3}{2} = 1\frac{1}{2}\text{hrs}$

$4\frac{1}{6}\text{hrs}$

$4 + \frac{1}{\cancel{6}} \times \cancel{60}^{10}$

=4:16

11:30	1540
+4:10	-1200
1540hrs	3:40pm

From Mukono to Kayunga

	1:30pm – 11:30pm 1330hrs – 1130hrs 2 x 60min =120min From Kayunga to Kasawo ~~96~~ x 60min ~~64~~ 3 x 60 2 = 90min Resting time 40mins Total time 120 90 +40 250mins 250 ÷ 60 = 4hr&10min 11:30 +4:10 15:40 15:40 -12:00 3:40pm Dream school bus reached Kasawo at 3:40pm
32	Simplify $\frac{0.24 \times 0.3}{0.8}$ **Solution process** Step1. change the decimals to fraction as below $\frac{0.24 \times 0.3}{0.8}$ $\frac{24}{100} \times \frac{3}{10} \div \frac{8}{10}$ Step 2. change the reciprocal of the fraction which has a division sign as below $\frac{8}{10}$ to $\frac{10}{8}$ Step 3. then change division to multiplication sign as from $\div \frac{8}{10}$ to $(\times \frac{10}{8})$ Now write the whole statement as below $\frac{\cancel{24}^{\cancel{12}^{\cancel{6}^{3}}}}{} \times \frac{3}{} \times \frac{}{\cancel{10}}$

100 ~~10~~ ~~8~~ 4 2 1

(3 x 3)
100
(9)
100
0.09

(b) A carpenter bought 3 pieces of timber and measuring 1.97m, Find the total length of the timber he bought.

Solution process

1.97 x 3m

197 x 3
100

591m
100

5.91m

The carpenter bought 5.91m

THE DREAM WISHES YOU SUCCESS AS YOU WATCH OUT FOR SET FIVE