KOLFRAM
EDUCATIONAL SERVICES KAMPALA

STANDARD **KOLFRAM IN USE**

PRE NATIONAL MOCK CHAMPIONSHIP 2024

PRIMARY 7

SET ONE

OUT OF 8 + MOCK

MATHEMATICS

IDENTIFICATION SPACE

NAME:.....

SCHOOL:.....

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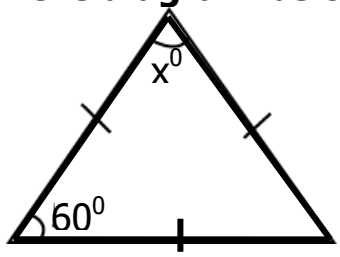
SECTION A

1. How many times does 20 go into 2000?

Divide 20 by 2000 to find the dividend

$\frac{2000}{20} = 100$

2. In the diagram below, what is the value of angle x?



$60° + 60^0 + x = 180°$

$120^0 + x = 180^0$

$120^0 - 120^0 + x = 180^0 - 120^0$

$x = 60^0$

This is equilateral triangle

3. Express 20 as a fraction of 1200 in the simplest term.

$\frac{20}{1200} = \frac{10}{600} = \frac{1}{60}$

4. Solve: x + 12 = -3x

Collect like terms

x + 12 = -3x

x +3x = 12

$\frac{4x}{4} = \frac{12}{4}$

Divide by 4 throughout

x = 3

5. A staff meeting at Praise Primary school- Hoima started at 9:30am and lasted 2hours 30munites. At what time did it end?

9:30
+ 2: 30
12: 00

The meeting ended at 12:00pm

6. Mugenyi, who is a builder, is to mix sand and cement in the ratio of 5:1. How many kilograms of cement will be needed to mix 140kg of sand?

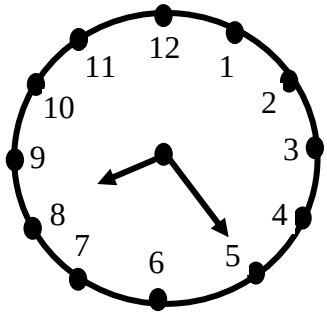
$5kg\ of\ sand = 1\ kg\ of\ cement$

140 kg of sand = ?

$\frac{140}{5}$

= 28 kg of cement

7. Tell the evening time shown on the clock face below.



It is 8:25 pm (**pm** for the evening time)

Wrong response

2: 25 pm

In English, we tell the time by what is shown on the clock face

8. Set M has 4 members. How many proper subsets do M has?

Solution

n(M) =4

Proper subset = $2^n - 1$

= $2^4 - 1$

= ([2 x 2] x [2 x 2]) – 1

= (4 x 4) – 1

= 16 -1

= 15 proper subsets

9. Daniel planted 35 trees on the either side of the road to his home. If 10 trees dried, how many trees survived altogether?

Solution

Note: ***Either side means "on the two sides"***

Number of trees planted = 35x 2

= 70

Trees which dried= 10

70- 10 = 60

60 trees survived

10. A taxi carries 14 passengers while a bus carries 54 passengers. If the two vehicles made three journeys each, how many more passengers were taken by a bus than a taxi?

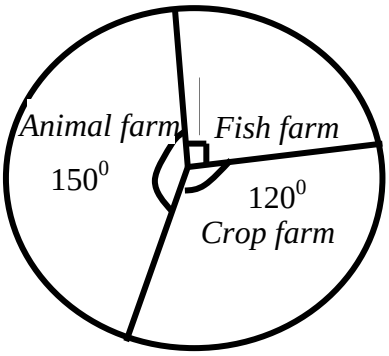
Method 1	*Method II*
Total number of journey: 3 times *Total passengers taken by a bus* *= 54 x 3 = 162* *Total passengers taken by a taxi* *= 14 x 3 = 42* *Difference: 162- 42= 120* *The bus took 120 more people than the taxi.*	*Total number of journeys made by both: 3* *<u>This is the common factor for taxi and bus</u>* *Passengers taken by bus – passengers taken by taxi* *(3 x 54) – (3x 14)* *3x (54-14)* *3 x 40 = 120* *The bus took 120 more people than the taxi*

11. If the cost of 2 kilograms of meat is Shs 30,000, how many kilograms of meat did Kanyama buy if he went with Shs. 50,000 and came back with Shs. 5,000 after buying meat?

Solution

2 kilograms of meat is shs 30,000
1 kilogram of meat is shs $\frac{30,000}{2}$
1 kilogram of meat is shs 15,000
50,000- 5,000= 45,000
$\frac{45,000}{15,000} = 3$
Kanyama bought 3kg of meat

12. The pie- chart below shows how Sharif uses her land. Use it to answer the question that follows.



Calculate the size of her land if she uses 72 acres for crop farm.

If the size of land is Q
Then, $\frac{120}{360}$ *of* $Q = 72$ *acres*

$= 72 \; x \; \frac{360}{120} acres$
$= \; 216 \; acres$
Sharif uses 216 acres of land for crop farm

13. Kintu's walking speed is 36 km per hour. Express this in metres per second.

Change km to m and hours to second
1km= 1000m
36km= 36x 1,000
= 36,000m
1hr = (60x 60 seconds)
= 3600 seconds
$= \frac{36,000}{3,600}$
=10m/s

14. Mark spends 50% of his monthly salary on school fees payment. How much is his salary if he spends Shs. 300,000?

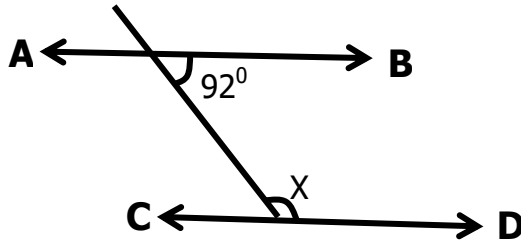
Let the salary be x

$\frac{50}{100} of\ x = 300{,}000$

$x = 300{,}000\ x \frac{100}{50} = shs\ 600{,}000$

Mark earns 600,000 as his monthly salaries

15. Find the size of the angle marked x in the figure below. AB is parallel to CD.



92 + x = 180

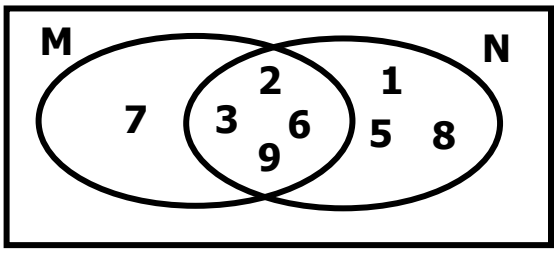
92-92 +x = 180-92

x = 180 – 92

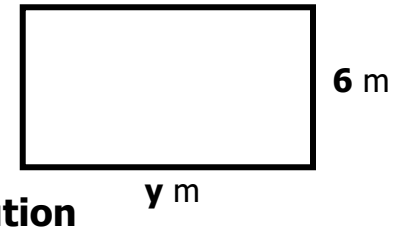
= 88^0

The sum of 2 parallel angles equal to 180^0

16. Given that Set M = {2, 3, 4, 6, 7, 9} and Set N= {1, 2, 3, 5, 6, 8, 9}. Represent the information above on the Venn diagram below



17. The area of the rectangular garden below is $54m^2$ what is the length of the rectangle?



Solution

Area = length x width

$54m^2$ = y m x 6m

$54m^2$=6y m

Divide by 6m throughout

$\frac{6y\ m}{6m} = \frac{54m^2}{6m}$

y = 9m

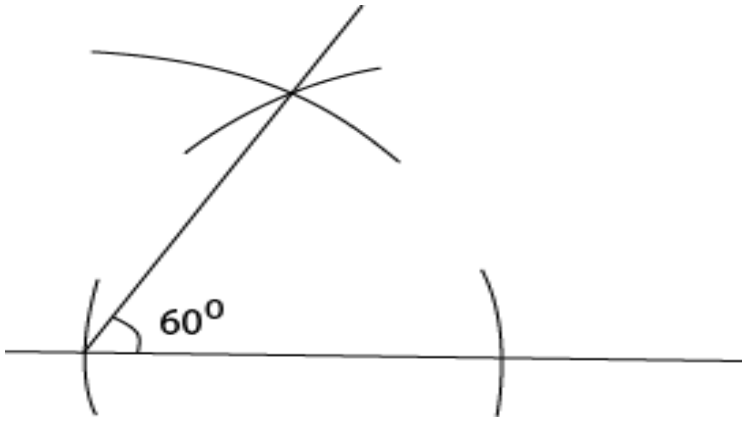
18. Musa walked for 1½ hours at an average speed of 4 km per hour. What distance did he cover?

Method 1	*Method II*
Distance covered = Speed x time	***Distance covered = Speed x time***
= 4x 1½	***= 4x 1½***
$= 4\ x\frac{3}{2}$	$= 4\ x\frac{3}{2}$
$\frac{4x\ 3}{2} = \frac{12}{2}$	$= 4x\frac{3}{2}$
= 6 km	***= 6 km***

19. Using a ruler and a pair of compasses only, construct an angle of 60^0 the space provided.

Steps taken

- ✍ *Draw a **straight** horizontal line*
- ✍ *With a compass placed at one end, make an arc at one side of the line and another arc above the line.*
- ✍ *Remove the compass and place at the point where the arc meets the line on the other side and draw an arc at the former point and another one to cut the arc drawn above the fine.*
- ✍ *Draw a line through the intersection of the two arcs above.*
- ✍ The angle between this line and the original line is 60^0



20. Find the next two numbers in the sequence:

10, 20, 30, 40, _____, _____

Solution

0, 10, 20, 30, 40, **50**, **60**.

+10 +10 +10 +10 +10 +10

SECTION B

(*Question **21** to **32** carries **60** marks***)**

21. In a mathematics test given to class, the marks scored are shown in the table below.

(a)

Marks scored	Frequency	Total marks
4	2	8
5	7	**35**
6	6	36
9	8	**72**
10	3	30
11	9	99

Complete the table.

(b) **What was the mode?**

9 (appears most)

(c) **How many pupils were in the class?**

Number pupils = sum of frequencies

= 2 + 7+ 6 + 8 + 3 + 9

= 35 pupils

(d) **What was the average mark scored?**

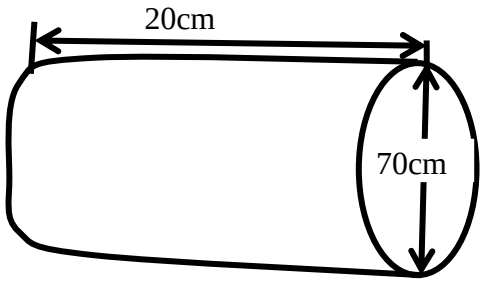
$$Average = \frac{sum\ of\ items}{total\ number}$$

$$= \frac{8 + 35 + 36 + 72 + 30 + 99}{35}$$

$$= \frac{280}{35}$$

$$= 8$$

22. The diagram below shows a roll of cloth which was cut open to make some clothes. Use it to answer the question that follow.



(a) Find the length of the cloth which was made out of the sheet.

(Take $\pi=\frac{22}{7}$) *(03 marks)*

The length of the drum = circumference of the circle

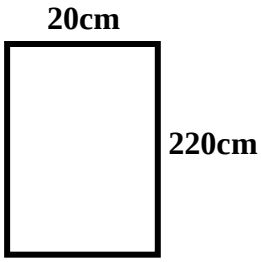
$= \pi D$

$= \frac{22}{7} \times 84$

$= \frac{22 \times 70}{7}$

220 cm

(b) Work out the area of the cloth in metres (02 marks)



Area = L x W

= 20 x 220

= 4400cm²

Convert 4400 cm² to metres

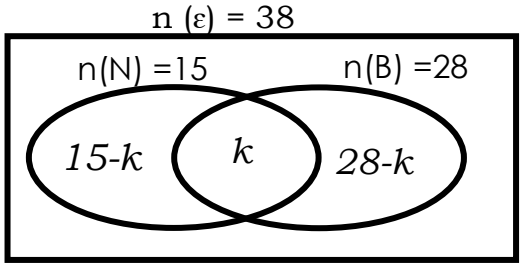
100cm= 1m

4400 cm $= \frac{4400}{100}$

= 44m

23. There are 38 pupils in primary seven class at St. Paul primary School. 15 pupils like playing netball (N), 28 like playing Volleyball (V) and y children like both games. If each of the pupils like at least one of the games.

(a) Show the above information on a clearly labeled Venn diagram. (2marks)



(b) how many pupils like:		
(i) Both Netball and basketball?	iii)	Netball or basketball but not both?
Method I 15-y+y+28-y = 38 -y + y-y +15+28 = 38 -y + 43-43 = 38-43 -y = -5 $\frac{-y}{-1} = \frac{-5}{-1}$		**Method I** n(N only) + n(B only) (15-y) + (28-y) (15-5) + (28-5) 10 + 23 = 33

y=5 **Method II** n (N n B) = n(N) + n(B) – n (ε) y = (15 +28) – 38 y= 43 – 38 y= 5		**Method II** n (ε) - n (N n B) 38 -5 = 33

24. (a) What is the place value of the digits in the numeral 1001_{two}? **(2 marks)**

two two twos	two twos	**twos**	ones
1	0	0	1
Two two twos	Two twos	Twos	Ones

(b) Change 120_{ten} to binary base. (2marks)

÷	120	Rem
2	60	0
2	30	0
2	15	0
2	7	1
2	3	1
2	1	1
2	0	1

120_{ten} to binary base is 1111000_{two}

(c) Given that $102_{four} = 24_p$, find the value of p. **(2marks)**

Solution

$(1 \times 4^2) + (0 \times 4^1) + (2 \times 4^0) = (2 \times p^1) + (4 \times p^0)$

$(1 \times 4 \times 4) + (0 \times 4) + (2 \times 1) = (2xp) + (4x1)$

$16 + 0 + 2 = 2p + 4$

$18-4 = 2p + 4-4$

$\frac{14}{2} = \frac{2p}{2}$

$p = 7$

25. Jamie went with Sh. 50,000 note and bought the following items

3kg of sugar at 4,000/= per kilogram

1 ½ kg of salt at 5,000/=

2 bars of soap for 10,000/=

If he was given a discount of 10%, find his discount.

Solution

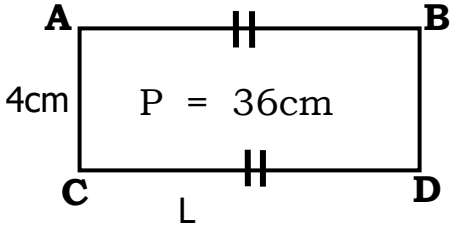
3kg of sugar at 4,000/= per kilogram
Total amount paid for sugar
1kg= 4,000
3kg= 3x 4,000
=Shs. 12,000

1 ½ kg of salt at 5,000/=
$\frac{3}{2}$ x 5,000
$= \frac{15000}{2}$
= 7,500

2 bars of soap for 10,000/=.
Total amount of money paid
Shs. 12,000
+ Shs. 7,500
Shs.10,000/=
Shs. 29,500/=

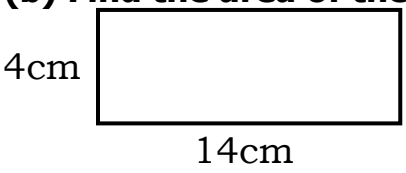
26. Study the diagram below and use it to answer the questions that follow

(a) Find the length.



$P = 2L + 2W.$
$36 = 2L + (2 \times 4)$
$36 = 2L + 8$
$36 - 8 = 2L + 8 - 8$
$\frac{28}{2} = \frac{2L}{2}$
$14 = L$
L = 14cm.

(b) Find the area of the figure above.



Area = length x width

A = LX W

A = 14cm x 4 cm

A=56cm^2

27. In Kasiiso Chicken feed factory, crushed fish is mixed with maize flour in the ratio 1:3 The feed are packed in 80kg bags.

a) How many Kilograms of fish are used in one bag of the feeds?

Total ratio = 1 + 3 = 4

Mass of fish $= \frac{1}{4}$ *x* 80

= 20 kg

b) If one Kilogram of maize flour costs Sh 400, how much does it cost to buy maize flour to make feeds weigh l000Kg?

Solution

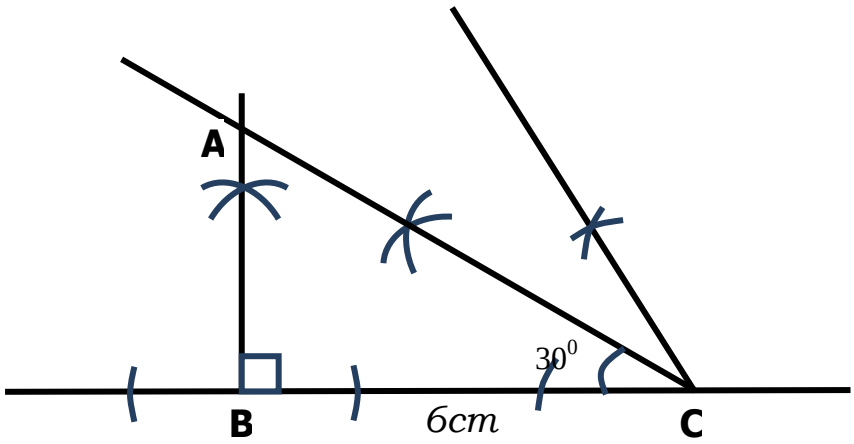
Mass of fish $= \frac{1}{4}$ *x* $1000 = 250kg$

Mass of maize = 1000 – 250 = 750kg

Cost of maize in 1000kg of feed = 750 x 400

= shs 300,000

28. Using a pencil, ruler and a pair of compasses only, construct triangle ABC in which BC = 6cm, angle ABC = 90 and angle BCA = 30°



a. Measure the length of AC = 7.0 cm

b. Name the triangle constructed above

Right angled triangle

29. There are 20% more girls than boys in the class.

(a)What is the percentage for boys and girls in the class?

Let the number of boys be x.

Boys	Girls	Total
x	x + 20%	100%

(x + x) + 20% = 100%

2x + 20% = 100%

2x + 20% - 20% = 100% - 20%

2x = 80%

$\frac{2x}{2} = \frac{80\%}{2}$

x = **40**%

40% are boys

(20+ 40%) are girls

60% are girls

(b) If there are 120 children in the class, find the number of girls.

(2marks)

Solution

60%

100 x 120

6 x 12

72 girls

30. A car consumes 5 litres of petrol for every 45km.

(a) How many litres are required to cover a distance of 36km at the same consumption?

Solution

5 litres of petrol for every 45km

1 litre of petrol will cover $\frac{45km}{5}$

1 litre of petrol will cover 9km

Let the amount of petrol needed be x

X litre of petrol will cover 36km

$\frac{36}{9}$ **= 4 litres**

4 *litres of petrol will cover* ***36****km*

(b) Find the distance it will cover if fueled with 54 litres of petrol.

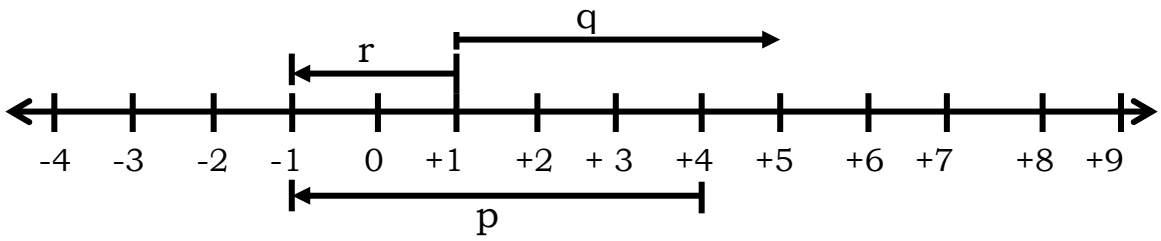
Solution

1 litre of petrol covers 9km

54 litres of petrol will cover 54 x 9

= 489km

31. Study the drawn number line.



Give the value of

(i) r = **-2**

(ii) q = **+4**

(iii) p = **-5**

32. (a) If today is Thursday, what day of the week will it be 82 days from now?

82 ÷ 7 = 11 Rem 5 (mod 7)

82 = 5 (mod 7)

4 + 5 = _____ (mod 7)

9 ÷ 7 = 1 Rem 2 (mod 7)

9 = 2 (mod 7)

The day will be Tuesday.

(b) Multiply: 3 x 2 = r (finite 5)

3 x 2 x 2 = r (finite 5)

(3 x 2 x 2) ÷ 5 = r (finite 5)

12 ÷ 5 = r (finite 5)

2 Rem 2 = (finite 5)

r = 2 (finite 5

(c) If today is Saturday, what day of the week was it 164 days ago?

164 ÷ 7 = 23 Rem (mod 7)

164 = 3 (mod 7)

6 - 3 = 3 (mod 7)

The day was Wednesday.

STANDARD KOLFRAM PREMIUM PRE MOCK SETS

SKIU is a series of 8 well balanced and sorted set of pre mock examinations meant to prepare the candidates for National Mock Championship conducted yearly.

National Mock Championship is organized annually to help lay the basis of preparing candidates for the final Primary Leaving Examinations set and examined by Uganda National Examinations Board (UNEB)

Features of this workbook

- *Quality questions for learners to try before they get access to the correct responses.*
- *Well highlighted common mistakes which enable P7 candidates to eliminate common mistakes written in the final examinations*
- *Further confusing related contents to each question have also been clarified to avoid failure in the related questions.*
- *Common misconceptions in various learning areas have also been clarified to help sort out public concern over irrelevant information.*

Appreciation

We appreciate you for moving with us till this level. We also pray for the best of it all that you "**Discover your potentials**" as we do at Kolfram Educational Services Kampala and you shine brighter in the final examination for this year. Keep following us for yet more editions to come.

Reminder of the day

"Smart people do not do different things from others, they only do their things differently from others" **That's who you are**