SECTION A.

1. Workout: 36÷6

$\frac{36^{6}}{\cancel{6}}$ = **6**

36 – 6 = 30
30 – 6 = 24
24 – 6 = 18
18 – 6 = 12
12 – 6 = 6
6 – 6 = 0

$6\overline{)36}$
- 0↓
36
-36
00

2. Write in words:1,995.
One thousand nine hundred ninety five

3. Round off 34.567 to the nearest tenths.

t h th
3 4. 5 6 7
=3 4. 5
+ 0. 1
3 4. 6

4. Four black books cost sh.24000. Find the cost of 8 similar black books

4 books = sh 24000

1 book = $\frac{shs.24^{6}000}{\cancel{4}}$

= sh 6000

8 books = sh 6000 × 8

= shs. 48000

5. Using ruler, a sharp pencil and a pair of compasses only, construct an angle of 105°

6. Given that,17_n=15_{ten}. Find the base represented by n.

$17_n^o = 15_{ten}$
$1\times n^1+7\times n^o=15$
$1\times n+7\times 1=15$

n+7=15
n+7 – 7 = 15 – 7
n=9

7. Workout:(42÷6)-(30÷6) using distributive property

$(42-30)\div 6$

$= 12\div 6$

$= \frac{\cancel{12}^{2}}{\cancel{6}}$

$= 2$

8. Given -4, 3,-1,0 and 2. Arrange the integers in ascending order.

$=$ **(-4, -1, 0, 2, 3)**

9. Express 7.8 in standard form

$= 7.8 \times 10^{n}$

$= 7.8 \times 10^{0}$

10. Express 0.363636.....as a vulgar fraction in it's simplest form.

0.363636

$= \frac{36-0}{100-1}$

$= \frac{\cancel{36}^{4}}{\cancel{99}_{11}}$

$= \frac{4}{11}$

Let K = 0.3636

$100k = 0.3636\times 100$

$100k = 36.3636$

$100k = 36.3636$

$-\quad K = 0.3636$

$\frac{\cancel{99}k}{\cancel{99}} - \frac{\cancel{36}^{4}}{\cancel{99}_{11}}$

$k = \frac{4}{11}$

11. 5/8 of water in the tank last a company for 45days. How long will 2/3 of the water will last the company?

$5 = 45$ days

$1 \quad \frac{45}{5}$

$8 \quad \left(\frac{\cancel{45}^{9}}{\cancel{5}} \times 8\right)$

$=$ **72 days**

$\frac{2}{\cancel{3}_{1}} \times \cancel{72}^{24}\ days$

2×24

$=$ **48 days**

12. Find the LCF of 3 and 5

F3 = (1, 3)

3 ÷1=3

3 ÷3=1

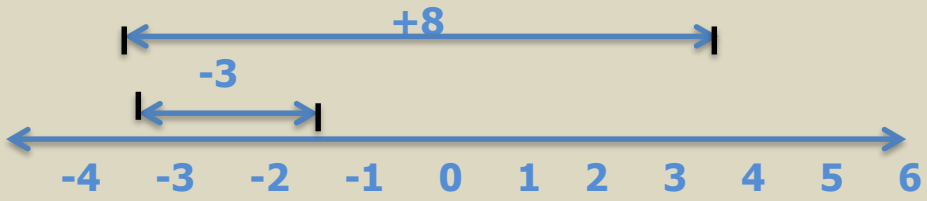
F5

5÷1

5÷5

LCF = 1

13. simplify;-3+(+8)using a number line



= +5

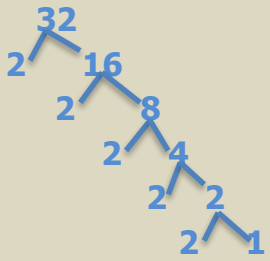
14. Set k has 32 subsets. Find n(k)

2^n = no of sub sets

2^n = 32

$2^n = 2^5$

∩ (k) = 5



15. Find the smallest number of mangoes that can be divided among 6 girls or 8 biys and leaves 2 as a remainder.

No of mangoes = (LCM + 2)

2	8	6
2	4	3
2	2	3
3	1	3
	1	1

LCM = 2×2×2×3

= 4×6

= 24 = 2

= 26 mangoes

16. Work out the mean of 8,5,0,6,4 and 1.

Mean = $\frac{sum\ of\ data}{No\ of\ data}$

$= \frac{8+5+0+6+4+1}{6}$

$= \frac{24^4}{6} = 4$

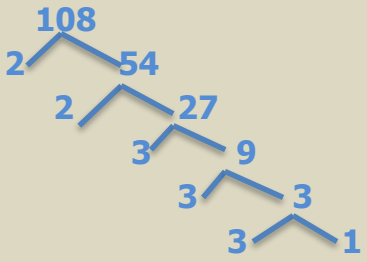
17. The base area of a cylinder is 154sq.cm. Calculate its volume of the height is 20cm.

Vol = (B.A × H)

= 154cm^2 × 20cm

= 3080cm^3

18. Express 108 as the product of its prime factors.



= $2^2 \times 3^3$

19. Express 0.000765 in standard form

20. Solve :3a-6=a+4

$3a - 6 = a + 4$

$3a - 6 + 6 = a + 4 + 6$

$3a = a + 10$

$3a - a = a - a + 10$

$\frac{2a}{2} = \frac{10^5}{2}$

a = 5

SECTION:

21. a) change 8/33 into a recurring decimal

$\frac{8}{22} = 8 \div 33$

$33\overline{)8.0000}$

0

80

66

140

132

80

66

140

= 0.2424

b) Simplify: 2 4/5 × 2/7 ÷ 11/9

$$2\frac{4}{5}\times\frac{2}{7}\div 1\frac{1}{9}$$

$$\frac{14}{5}\times\frac{2}{7}\div\frac{10}{9}$$

$$\frac{14}{5}\times\left(\frac{2}{7}\times\frac{9}{10}\right)=\frac{2}{5}\times\frac{9}{5}$$

$$=\frac{18}{25}$$

22. Two bells at a certain school are rung at intervals of 40 minutes and 50 minutes respectively for both lower and upper primary to change the lessons. How many lessons will each section have had by the time the two bells ring together?

LCM of 40 min and 50 min

2	40	50
2	20	25
2	10	25
5	5	25
5	1	5
	1	1

2×2×2×5×5

= (4×10)5

= 200 minutes

Lessons

Lower

$\frac{20^{5}\cancel{0}}{\cancel{40}}$

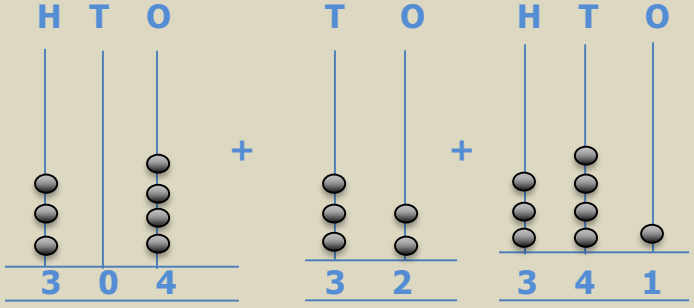
= 5 lessons

Upper

$\frac{20^{4}\cancel{0}}{\cancel{50}}$

4 lessons

23. The diagrams below shows the addition of two numbers in base five. Use them to answer the questions that follow.



a) Write down the additional statement shown above

$304_{five}+32_{five}$

b) Workout the operation and show your answer on the abacus

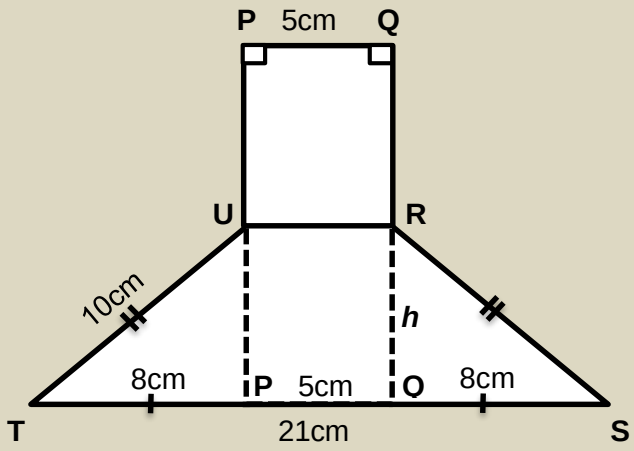
$3\ 0\ 4_{five}$

$+\ 3\ 2_{five}$

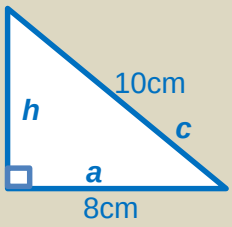
$3\ 4\ 1_{five}$

24. PQRSTU below is a combined figure Line PU=QR=8cm,TU=SR=10cm and PQ=5cm.

a) Find the value of h



solution



(a) 21cm – 5cm = 16cm

ES = TE = $\frac{16cm}{2}$

= 8cm

$h^2=c^2 = a^2$

$h^2 = 10^2 - 8^2$

$h^2 = 10 \times 10 - 8 \times 8$

$h^2 = 100 - 64$

$\sqrt{h^2} = \sqrt{30}$

h=6cm

OR

$a^2+h^2=c^2$ make a^2 the subject

$a^2 - a^2 + h^2 = c^2 - a^2$

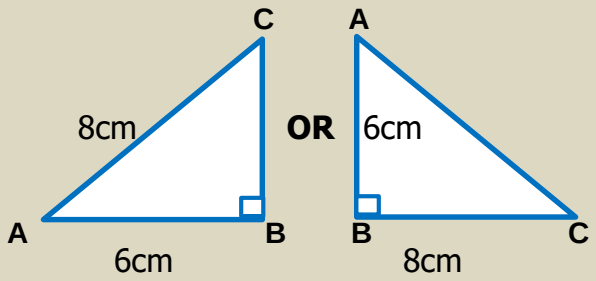
$h^2 = c^2 - a^2$(substitution)

b) Workout the perimeter of the figure above

P = (21cm + 10cm + 8cm + 5cm + 8cm + 10cm)

P = 62cm

25. a)Using a ruler a pencil and a pair of compasses only, construct a triangle ABC where AB= 6cm, <ABC=90°and BC=8cm.



b) Find the area of the triangle ABC

Area = $\frac{1}{2}bh$

= $\frac{1}{\cancel{2}}$ x $\cancel{8}^{4}$ x 6

4x6 = 24cm²

26. Mugisha went shopping and bought the following items.

3 packets of wheat flour at sh.7800@

2000ml of cooking oil at sh.6500 per litre

1 ½ kg of sugar at sh.5000@kg

Packet of baking powder at sh.1500.

a) Find mugiaha's expenditure

Wheat flour	Oil	Sugar	Baking =	Total
Shs 78000 × 8 = shs 23,400	$\frac{2000}{1000} \times 65000$ = shs 13000	1 ½ kg 5000 $\frac{3}{\cancel{2}_{1}} \times \cancel{5000}^{28000}$ $= shs\ 75000$	shs 1500	23 400 15 000 7 600 1 500 45 400

b) Workout his change if he went shopping with a fifty thousand Shilling note.

Shs 50,000 – 45,400

= shs 4,600

27. Kevina spent ¼ of her monthly in food, 4/5 of the reminder on fees and the rest on water. If she spent sh.70,000 more on fees than on food

a) Find the fraction she spent on water

Food	Remainder	Fees	Water
= ¼	$1-\frac{1}{4}=\frac{4}{4}-\frac{1}{4}$ $=\frac{3}{4}$	$\frac{4}{3}of\frac{3}{4}$ $1-\left(\frac{1}{4}+\frac{3}{5}\right)$ $1-\left(\frac{5+12}{20}\right)$ $1-\frac{17}{20}$ $\frac{20}{20}-\frac{17}{20}$ $=\frac{3}{20}$	$1-\left(\frac{1}{4}+\frac{3}{5}\right)$ $1-\left(\frac{5\pm}{20}\right)$ $1-\frac{17}{20}$ $\frac{20}{20}-\frac{17}{20}$ $=\frac{3}{20}$

b) Find kevina's monthly salary

$$\frac{3}{5}-\frac{1}{4}$$

$$=\frac{\left(\frac{3}{\cancel{5}}\times\cancel{20}^{4}\right)-\left(\frac{1}{\cancel{4}}\times\cancel{20}^{5}\right)}{20}$$

$$\frac{12-5}{20}$$

$$=\frac{7}{20}$$

70 parts = Sh 70,000

1 = $\frac{sh\ 70000}{7}$

20 parts = $\frac{sh\ \cancel{70000}^{10000}\times 20}{\cancel{7}_{1}}$

Sh 10000 × 20

=sh 200,000

Or Let the monthly salary be K

$$\frac{7}{20}\times k=70000$$

$$\frac{7k}{20}=70000\times 20$$

$$\frac{\cancel{7k}}{\cancel{20}}=\cancel{70000}^{10000}\times 20$$

***k* = shs 200,000**

28. a) Change 72km/hr to M/s

1km = 1000m

72km

D = 72×1000m

1 hr = 3600 sec

S=$\frac{D}{T}$

=$\frac{\cancel{72}^{2}\times 1000m}{\cancel{3600}s}$

= 2×10ms

= 20m/s

b).Aman drove at 80km/hr for 2 ¼ hrs. He rested for 45minutes. After resting, he covered 240km at 80km/hr. Calculate the average speed for the whole journey

s=$\frac{T.D.C}{T.T.T}$

D=xy

$D_1 = \left(80km/hr \times 2\frac{1}{4}hrs\right)$

$\cancel{80}^{20}km/hr \times \frac{9}{\cancel{4}_{1}}hrs$

D_1 = 180km/hr

D_2 = 240km

T.D.C = 180 + 240km

= 420km

$T = \frac{D}{S}$

= $\frac{\cancel{240}^{3}}{\cancel{80}}$

=3hr

T.T.T = 2 ¼ hr + 45min + 3hr

= 2hr + 15min + 45min + 3hrs

=2hr + 1hr + 3h

=7hr

=$\frac{\cancel{420}^{60}km}{\cancel{7}hr}$

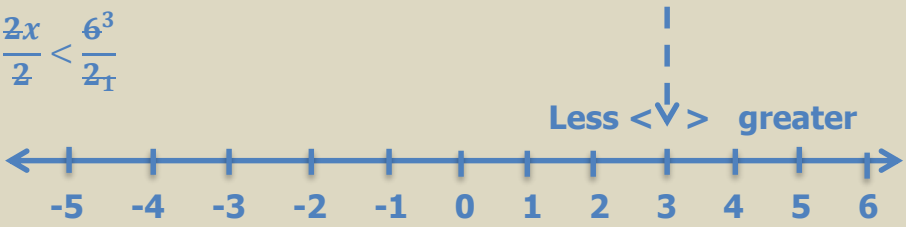
=60km/hr

29. a)Solve then find the solution set of the inequality:

2x-3<3

$2x - 3 + 3 < 3 + 3$

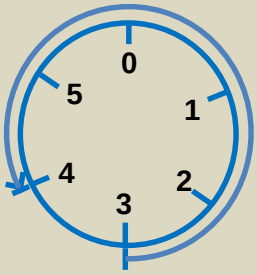
$\frac{\cancel{2}x}{\cancel{2}} < \frac{\cancel{6}^{3}}{\cancel{2}_{1}}$



$2x - 3 < 3$ **{2, 1, 0, -1, -2, -3....)**

b) Workout:3-5=.....(mod6) using dial method

3-5= 4 (mod6)



30. a) Malik bought 5 books and 3 pens at sh.25000. If the cost of a book is sh.200 more than a pen, find the amount Malik spent on each item.

Man	Son
36	**14**
(36 + P)	**(14 + P)×2**

36 + P = 28+2P
28 + 2P = 36 + P
28 – 28 + 2P = 36 – 28 + 2P
2P = 8 + P
2P – P = 8 + P –P
P = 8

After 8 years the father will be twice the son's age.

b) Solve for kifa=12 and 6k-18=a
6k – 18 = 12
6k – 18 + 18 = 12 + 18
$\frac{\cancel{6k}}{\cancel{6}} = \frac{\cancel{30}^{5}}{\cancel{6}}$
K = 5

31. a) The area of a square garden is 616cm^2.Find the length of each side.(use=$\frac{22}{7}$)

A = 3 × 3
A= 3^2
$\sqrt{144} = \sqrt{53^2}$
$\sqrt{(2 \times 2 \times 2 \times 2) \times (3 \times 3)} = \sqrt{3^2}$
$2 \times 2 \times 3$
S=12cm

2	144
2	72
2	36
2	18
3	9
3	3
	1

b).Find the volume of a triangular prism whose base area is 120cm^2 and height 8cm.
Vol = (B.A × H)
= 1200cm^2 × 8cm
= 9600cm^3

Cap = $\left(\frac{vol}{1000}\right) L$
$= \frac{\cancel{9600}}{\cancel{1000}}$
= 9.6 litres

32. Ten children scored the following marks in mathematics less on test. 70, 85, 40, 60, 89, 60, 75, 60, 50, 60.

a) Find the modal frequency

70	85	40	60	89	75	50
I	I	I	III	I	I	I

Median frequency = 3 times

b) Find the median

$$\frac{60 + 60}{2}$$

$$\frac{\cancel{120}^{60}}{\cancel{2}_{1}}$$

= 60

c) Find the mean mark

Mean mark = $\left(\frac{sum\ of\ marks}{No\ of\ \ldots}\right)$

$$\frac{(70 \times 1) + (85 \times 1) + (40 \times 1) + (60 \times 4) + (89 \times 1) + (75 \times 1) + (50 \times 1)}{10}$$

$$\frac{70 + 85 + 40 + 240 + 89 + 75 + 50}{10}$$

$$\frac{649}{10}$$

= 64.9

OR

$64\frac{9}{10}$

END

END OF TERM ONE MATH EXAM 2024 E-LEARN UGANDA

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