THE REPUBLIC OF UGANDA

BUGWERI DISTRICT ACADEMIC BOARD

PRIMARY LEAVING MOCK EXAMINATION

2025

MATHEMATICS

Time Allowed: 2 hours 30 minutes

Index No.	Random Number						Personal Number		

Sample solutions to the questions

Organised by Sseggayi Benjamin Kasuka

Call/WhatsApp for inquires (0703 078 891 / 0785 600 165)

Read the following instructions carefully:

1. This paper has two sections: **A** and **B**. Section A has **20** questions and section **B** has **12** questions. The paper has **12** printed pages.
2. Answer all questions. All working for both sections **A** and **B** must be shown in the spaces provided.
3. All answers must be written using a **blue** or **black** ball point pen or **ink**. Any work done in pencil other than graphs and diagrams will **NOT** be marked.
5. No calculators are allowed in the examination room
6. Unnecessary changes in your work and handwriting that cannot be read easily may lead to loss of marks.
7. Do not fill anything in the table indicated: "**For Examiners' use only**" and boxes inside the question paper.

FOR EXAMINER'S USE ONLY		
QN. NO.	**MARKS**	**EXR'S NO.**
1 - 5		
6 - 10		
11 - 15		
16 - 20		
21 - 22		
23 - 24		
25 - 26		
27 - 28		
29 - 30		
31 - 32		
TOTAL		

SECTION A: 40 MARKS

Answer **all** questions in this section
Questions **1** to **20** carry **two** marks each

1. Work out:

$$\begin{array}{r} 567 \\ -\ 123 \\ \hline 444 \\ \hline \end{array}$$

2. Write 90,010 in words.

Ninety thousand, ten

.....

3. Given that n(P) = 3. Find the number of subsets in set P.

No. of subsets $= 2^n$
$= 2^3$
$= 2 \times 2 \times 2$
$= 8$ subsets

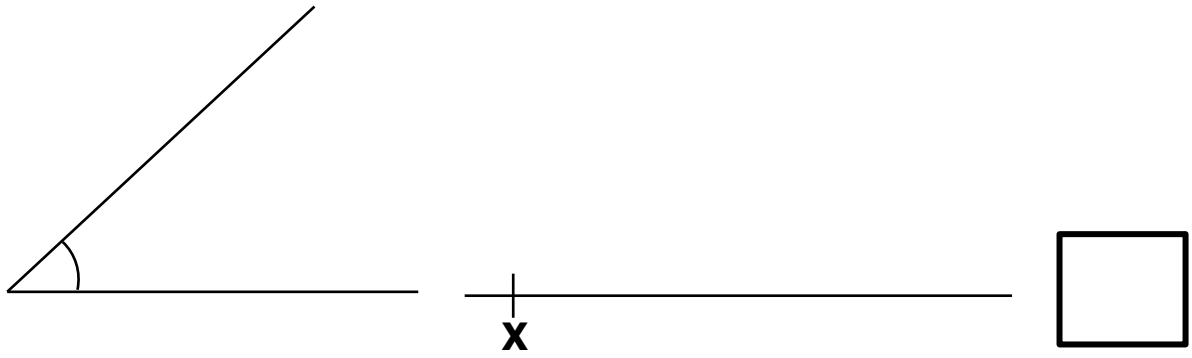
Set P has 8 subsets

4. Find the next term in the sequence:

$\frac{1}{16}, \frac{1}{8}, \frac{1}{4}, \frac{1}{2}, 1$ .....
$\times 2 \quad \times 2 \quad \times 2 \quad \times 2$

$\frac{1}{2} \times 2 = 1$

5. Using a ruler, a pencil and a pair of compasses only, copy the marked angle onto point **X**.



6. Simplify: $^{-}3 - {}^{+}2$

$^{-}3 - {}^{+}2$
$^{-}3 - ({}^{+}2)$
$^{-}3 - 2$
$^{-}5$

7. The prime factors of two numbers; $\boldsymbol{a}$ and $\boldsymbol{b}$ are given below.

$F\boldsymbol{a} = \{2_1, 3_1, 3_2, 5_1\}$
$F\boldsymbol{b} = \{2_1, 2_2, 3_1, 3_2, 7_1\}$

Use the given prime factors to find the highest common factor (HCF) of $\boldsymbol{a}$ and $\boldsymbol{b}$

$Fa \cap Fb = \{2_1, 3_1, 3_2\}$
HCF = 2 x 3 x 3
HCF = 18

8. Express CIX in Hindu-Arabic numerals

C = 100
IX = + 9
109

CIX = 109

9. Work out: $101_{two} + 11_{two}$

$$\begin{array}{r} 1\ 0\ 1_{two} \\ +\ 1\ 1_{two} \\ \hline 1\ 0\ 0\ 0_{two} \end{array}$$

1 + 1 = 2
2 ÷ 2 = 1 remainder 0

10. A girl buys 18 mangoes at sh 9000. Find the cost of 20 mangoes.

18 mangoes cost sh 9000
1 mango costs $\frac{\text{sh } 9000}{18}$
1 mango costs sh 500
20 mangoes cost sh 500 × 20
20 mangoes cost sh 10,000

11. Convert $1\frac{8}{25}$ kilogrammes into grammes.

$1\text{ kg} = 1000\text{ g}$

$1\frac{8}{25}\text{ kg} = \frac{33}{25} \times 1000\text{ g}$

$= 33 \times 40\text{ g}$

$= 1320\text{ g}$

$$\begin{array}{r} 33 \\ \times\ 4 \\ \hline 132 \end{array}$$

12. The tallies below represent the number of boys in a class of 40 pupils.

𝍸 𝍸 𝍸 𝍸 𝍸 |||

Find the number of girls in the class.

Number of boys
$(5 \times 5) + 3$
$25 + 3$
28 boys

Number of girls
$40 - 28 = 12$ girls

13. Use distributive property to work out: $(39 \times 73) + (39 \times 27)$

$(39 \times 73) + (39 \times 27)$

$39(73 + 27)$

39×100

3900

14. Solve: $2n + 3 = 17$

$2n + 3 = 17$

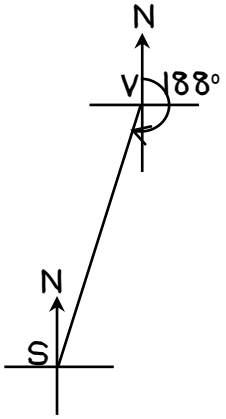
$2n + 3 - 3 = 17 - 3$

$2n = 14$

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

$n = 7$

15. The bearing of town **S** from town **V** is 188º. Find the bearing of town **V** from town **S**.



188°
-180°
008°

The bearing of V from S is 008°

16. Calculate the simple interest on sh 80,000 kept in a bank for 2 years at 5% per annum.

Simple interest = P x R x T

$= \text{sh } 80{,}000 \times \frac{5}{100} \times 2$

= sh 8000

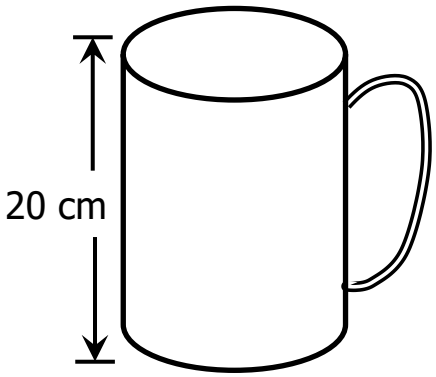
17. Given that $y = 3$ and $x = 2$. Find the value of $yx^2 - 4y$.

$yx^2 - 4y$
$(y \times x \times x) - (4 \times y)$
$(3 \times 2 \times 2) - (4 \times 3)$
$12 - 12$
0

18. A trader bought a shirt at sh 20,000. He later sold it at sh 17,500. Find his loss.

Loss = Buying price - Selling price
Loss = sh 20,000 – sh 17500
Loss = sh 2500

19. Below is a cylindrical cup whose volume is 3000 cm^3. Use it to answer the question that follows.



Find the area of a circular piece of cardboard needed to cover the cup above.

From Volume = Base area x height

So, Base area = $\frac{\text{Volume}}{\text{height}}$

$= \frac{3000\ cm^3}{20\ cm}$

$= 150\ cm^2$

20. A bus 10 metres long takes 1 second to cross a man standing alongside the road. Calculate the speed of the bus in kilometres per hour.

Distance in km

10 metres = $\frac{10}{1000}$ km

Time in hours

1 second = $\frac{1}{3600}$ hours

Speed in km/h

$S = D \div T$

$S = \frac{10\ km}{1000} \div \frac{1\ h}{3600}$

$S = \frac{10\ km}{1000} \times \frac{3600}{1\ h}$

$S = 36$ km/h

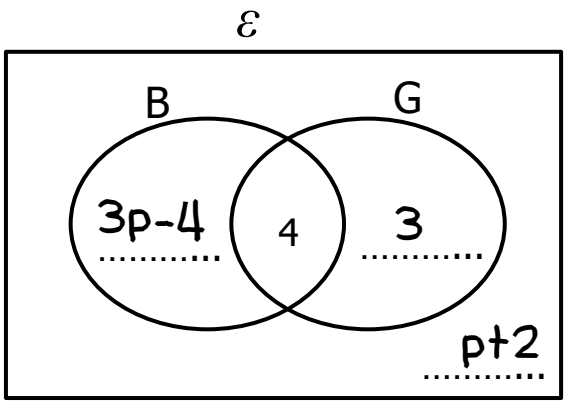
SECTION B: 40 MARKS

Answer **all** questions in this section

Marks for each question are indicated in brackets

21. In a village, 4 farmers grow both beans (**B**) and groundnuts (**G**). 3p farmers grow beans, 3 grow ground nuts only while p+2 grow neither of the two crops.

(a) Use the given information to complete the Venn diagram below. *(03 marks)*



(b) Given that 11 farmers do not grow beans. How many farmers grow beans only? *(03 marks)*

Value of p	Farmers who grow beans only
$(p+2) + 3 = 11$	$3p - 4$
$p + 2 + 3 = 11$	$3 \times 6 - 4$
$p + 5 = 11$	$18 - 4$
$p + 5 - 5 = 11 - 5$	14 farmers
$p = 6$	

22. (a) Simplify: $\frac{3}{4} - \frac{1}{4} \div \frac{3}{8}$ *(02 marks)*

$\frac{3}{4} - (\frac{1}{4} \div \frac{3}{8})$

$\frac{3}{4} - (\frac{1}{4} \times \frac{8}{3})$

$\frac{3}{4} - \frac{2}{3}$

$\frac{9-8}{12}$

$\frac{1}{12}$

(b) Work out: $\frac{1.3}{0.26 \times 0.2}$ *(03 marks)*

$\frac{13}{10} \div \left(\frac{26}{100} \times \frac{2}{10} \right)$

$\frac{13}{10} \times \frac{100}{26} \times \frac{10}{2}$

$\frac{1 \times 25 \times 1}{1 \times 1 \times 1}$

25

23. Kizito bought the following items from Uchumi supermarket.

4 kg of sugar at sh 4500 per kilogram
500 g of salt at sh 1200 each kilogram
$1\frac{1}{2}$ litres of cooking oil at sh 6000 a litre

Find Kizito's total expenditure. *(04 marks)*

Sugar
sh 4500
x 4
sh 18000

Salt
sh 1200 x $\frac{500}{1000}$
sh 120 x 5
sh 600

Cooking oil
sh 6000 x $\frac{3}{2}$
sh 3000 x 3
sh 9000

Total
sh 18000
sh 9000
+ sh 600
sh 27600

24. Kituyi left Mbale at 8:30 a.m. for Kampala driving at an average speed of 80km/h. She reached Kampala at 1:00 p.m. She rested for 1 hour and then drove back to Mbale through the same route at an average speed of 72km/h.

At what time did she reach Mbale? *(06 marks)*

12 00
-8 30
3 30
+1 00
4 30

$T = 4\frac{1}{2}h$

$D = S \times T$

$D = \frac{80 \text{ km}}{1 \text{ h}} \times \frac{9}{2} \text{ h}$

$D = 40 \text{ km} \times 9$

$D = 360 \text{ km}$

$T = D \div S$

$T = 360 \text{ km} \div \frac{72 \text{ km}}{1 \text{ h}}$

$T = 360 \text{ km} \times \frac{1 \text{ h}}{72 \text{ km}}$

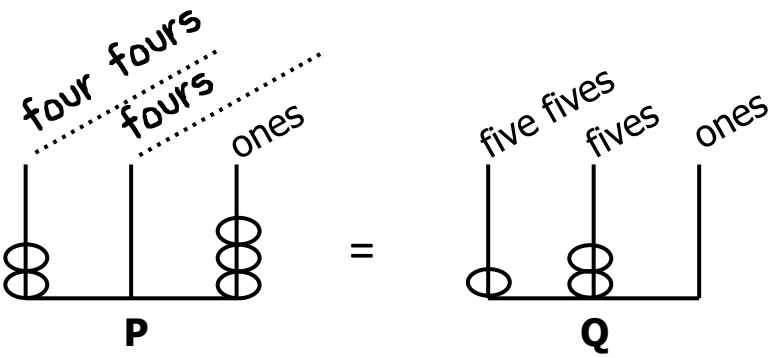
$T = 5 \text{ hours}$

1 + 5 hours = 6 hours

Arrival time to Mbale

1 00
+ 6 00
7: 00 p.m

25. The drawings below represent two abaci; **P** and **Q**. Use them to answer the question that follows.



Write the missing place values on abacus **P**. *(05 marks)*

Let the unknown base be g

$203_g = 120_{five}$

$(2 \times g^2) + (3 \times g^0) = (1 \times 5^2) + (2 \times 5^1)$

$2g^2 + (3 \times 1) = (1 \times 5 \times 5) + (2 \times 5)$

$2g^2 + 3 = 25 + 10$

$2g^2 + 3 = 35$

$2g^2 + 3 - 3 = 35 - 3$

$2g^2 = 32$

$\frac{2g^2}{2} = \frac{32}{2}$

$g^2 = 16$

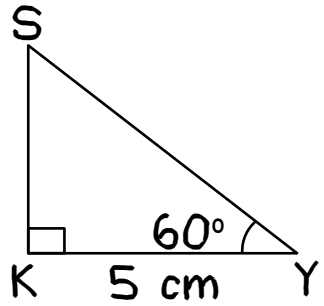
$\sqrt{g^2} = \sqrt{16}$

$g = 4$

g is base four

26. (a) Using a ruler, a pencil and a pair of compasses only, construct a triangle SKY such that angle K = 90º, angle KYS = 60º and line KY = 5 cm. *(04 marks)*

Sketch



Accurate diagram

(b) Measure line SY = ... cm *(01 mark)*

27. One hundred ten pupils of Primary Six stood 80 cm apart around a circular field. Find in metres, the diameter of the field. (Use $\pi = \frac{22}{7}$)

(04 marks)

Circumference in cm
110 x 80 cm = 8800 cm

Circumference in metres
(8800 ÷ 100) metres
88 metres

Diameter
πd = circumference
$\frac{22}{7}d$ = 88 m

$7 \times \frac{22}{7}d = 88\text{ m} \times 7$

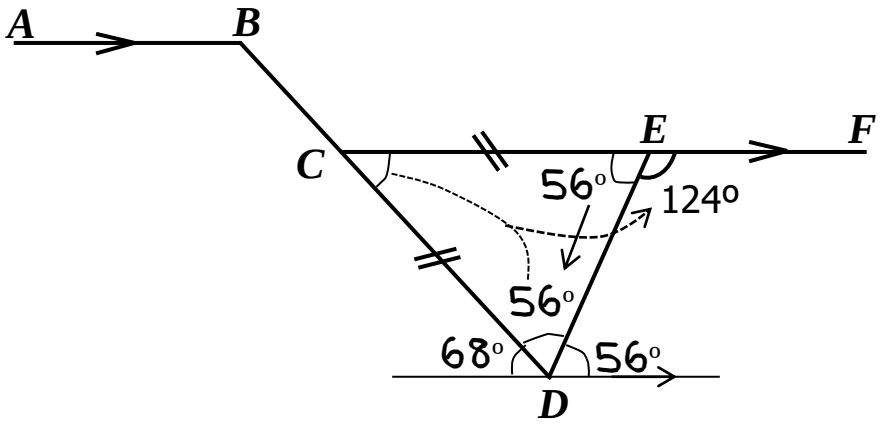
$\frac{22d}{22} = \frac{88\text{ m} \times 7}{22}$

$d = 4\text{ m} \times 7$

$d = 28\text{ m}$

The diameter is 28 metres

28. Study the figure below and use it to answer the question that follows.



Find the size of angle:

(i) ECD *(03 marks)*

Angle FED
180° - 124° = 56°

Angle ECD
ECD + 56° = 124°
ECD + 56° - 56° = 124° - 56°
ECD = 68°

(ii) ABC *(02 marks)*

Angle ABC
ABC = 56° + 56° (Alt. int. angles)
ABC = 112°

29. In a shop, a pen costs sh 300 more than a pencil and the cost of a ruler is 3 times the cost of a pen. Akram paid sh 1700 for a pencil and a ruler.

Find the cost of a pen. *(04 marks)*

Let the cost of a pencil be p

Pen	Pencil	Ruler
p + sh 300	p	3(p + sh 300)

Value of p

p + 3(p + sh 300) = sh 1700

p + 3p + sh 900 = sh 1700

4p + sh 900 = sh 1700

4p + sh900 - sh900 = sh1700 - sh900

4p = sh 800

$\frac{4p}{4} = \frac{\text{sh } 800}{4}$

p = sh 200

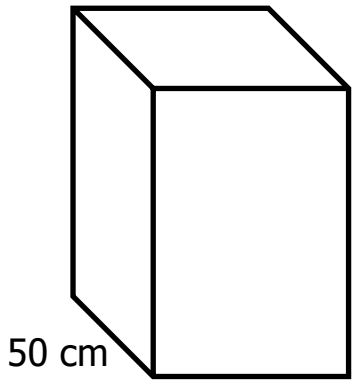
Cost of a pen

p + sh 300

sh 200 + sh 300

sh 500

30. Below is a rectangular water tank with a tap connected to it. The height of water in the tank is 45 cm. The tap pours 12 litres of water into the tank per minute.



If the tap is left open for 5 minutes, the tank becomes a sixth full. Find the actual height of the tank. *(06 marks)*

Capacity poured

5 x 12 = 60 litres

Volume of water poured

(60 x 1000) cm^3

60,000 cm^3

Height of water poured

Height = $\frac{\text{Volume}}{\text{Base area}}$

Height = $\frac{60{,}000\ cm^3}{(50cm \times 80cm)}$

Height = 15 cm

New height of water

45 cm + 15 cm = 60 cm

Actual height of the tank

1 part represents 60 cm

6 parts represent 6 x 60 cm

6 parts represent 360 cm

The actual height is 360 cm

Turn Over

31. Annet, Arnold and Amos shared sh 39,000 in the ratio of 3:8:2 respectively. How much money did each get? *(04 marks)*

Total parts
3 + 8 + 2 = 13

Amount equivalent to 1 part
sh 39,000 ÷ 13
sh 3,000

Annet's share
3 x sh 3,000 = sh 9,000

Arnold's share
8 x sh 3,000 = sh 24,000

Amos' share
2 x sh 3000 = sh 6,000

32. The table below shows marks scored by pupils in a test.

Marks	Number of pupils	Total marks
80	3	240
60	4	240
75	8	600

If the mean score was 72, complete the table above. *(06 marks)*

80 x 3 = 240

240 ÷ 4 = 60

Sum of marks
240
240
+600
1080

Number = Sum / Mean
Number = 1080 ÷ 72
Number = 15

15 - (3 + 4)
15 - 7
8

600 ÷ 8 = 75

END