

MUHANGA DISTRICT

END OF TERM TWO 2025-2026

MATHEMATICS EXAMINATION FOR S1 /100 Marks

INSTRUCTIONS : . Read the questions attentively

. Do all questions of section A

.Choose only three questions of section B

SECTION A : 55 MARKS

1. Consider the set B {2,4,6,8,10}

Answer by True or False for each of the following statements:/4Marks

- a) $2 \in B$
- b) $7 \in B$
- c) $10 \in B$
- d) $\{2, 4, 6, 8\} \in B$

2. State whether the following are true or false /5Marks

- A) $x-2=9$ when $x=7$
- B) $12-3x=0$ when $x=-5$
- C) $20+x=28$ when $x=8$
- D) $8=9-x$ when $x=1$
- E) $\frac{x}{4} = 5$ when $x=24$

3.Convert into percentage:/2Marks

- A)0.35 b) $\frac{2}{11}$

4. State whether the pairs sets bellow are : **equivalent , equal or neither** ./3Marks

- a) Set of integers and set of natural numbers
- b) $\{b, c, a\}$ and $\{z, a, b\}$
- c) $\{\frac{3}{7}, 3, 7\}$ and $\{\frac{7}{3}, 7, 3\}$

5. Complete the following : /5Marks

- a) Sets which have no common member are called(null set , disjoint sets)
- b) A set which does not contain any element is called a.....(cardinal number , null set)
- c) The union of sets A – B and B – A is known as
(intersection sets , symmetric difference)

- d) A set that contains all the subset under consideration is know as(universal set, union)
- e) is a circular representation or relationships that exist between a given set of things. (mapping, papygram)

6. Answer TRUE or FALSE :/4Marks

If $A = \{2,4,6,8\}$ $B = \{1,2,4\}$
 $C = \{6, 8, 10\}$

- i) $n(A) = 5$
 ii) $n(B) = 3$
 iii) $A \cap B = \{2\}$
 iv) $n(A \cup B) = 9$

7. choose and circle the correct answer

A) A certain set has 6 elements, how many subsets are there in a set :/2Marks

- i) 8 ii) 5 iii) 64

B) A set with 128 subsets. How many elements does it have?/2Marks

- i) 7 ii) 8 iii) 5

C) Given that $\mathcal{E} = \{a, b, c, d, e\}$ and $A = \{a, b, e\}$ /3Marks

- i) $A' = \{c, d\}$
 ii) $A' = \{a, b, c\}$
 iii) $A' = \{c, d, e\}$

D) The number of subsets in a given set :/1Mark

- Is given by : i) $NS = n^2$
 ii) $NS = 2^n$
 iii) $NS = 2n$

8 A).In a group of 20 girls, 16 play football, 12 play volleyball and 2 do not play either games. /5Marks

With the aid of a Venn diagram, find the number that play:

- i) Both games
 ii) Only one games

9) Solve the equations :a) $5 + (4 + x) = 8$ /2Marks

b) $3(2x + 1) - 5(x - 2) = 2(3 - 2x)$ /2Marks

10) Express the following ratios in their simplest forms:4/ Marks

a) 28:42 b) 1litre to 250cm c) 28 days to 2 weeks d) 45min : $1\frac{1}{2}$ hours

11) On Cartesian plane draw and label the lines whose equations are

a) $x = 5$ b) $y = -2$ c) $x = -4$ d) $y = 3.5$ /4Marks

12) Solve the inequalities : $3 - 7x \leq 2x + 21$ /3Marks

13) Illustrate each of the following inequalities on a number line. /4Marks

a) $x > -5$ b) $x < 0$ c) $x \geq -3$ d) $x \leq 4$

SECTION B : 45 MARKS

14. Given that $f(x) = 3x^2 + 2$: a) find $f(2)$ /2Marks

. b) Find the inverse of $f(x)$ /3Marks

C) Given the function $f(x) = 5x$ and $g(x) = 2x - 2$.

Find : i) $fg(x)$ /3Marks

ii) $gf(x)$ /3Marks

D) If $fg(x) = gf(x)$, find the value of x /4Marks

15a) Copy and complete the table below /9Marks

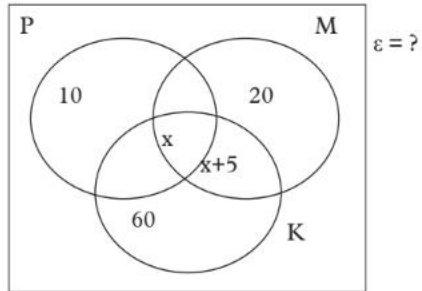
Function	Y-intercept	X-intercept	Gradient
$2y + 3x = 2$			
$3x + 4y = 8$			
$-15 + 9y = 3x$			

B) Draw the graph of $2x - y = 4$ /2Marks

C) State the coordinates of the points where the line meets : i) the x-axis /2Marks

iii) the y-axis/2Marks

16. The Venn diagram below shows the number of senior one students in a school who like Mathematics (M), Physics (P) and Kinyarwanda (K).
Some like more than one subject in total 55 students like Mathematics.



- (a) How many students like the three subjects?/5Marks
- (b) Find the total number of senior one students in the school./3Marks
- (c) How many students like Physics and Kinyarwanda only?/2Marks
- (d) How many students like at least two subject/3Marks
- (e) How many students like only one subject/2Marks

17) Set A maps onto set B by the operation "divide by 2 add 3" if set A = {4,8,12,16,20,24}

- a) list the elements of set B /2Marks
- b) Find the Ordered pairs /6Marks
- C) Map set A onto set B /4Marks
- c) Draw the graph of the relation /3Marks

GOOD LUCKY!!!!!!!!!!!!!!!!!!!!!!

