P456/1

MATHEMATICS

Paper 1

APRIL. 2023

2 hours: 10 minutes



SHAPTA JOINT ASSESSMENT BOARD

Uganda Lower Secondary Certificate of Education

S.3 MATHEMATICS

Paper 1

2 hours: 10 minutes

INSTRUCTION TO LEARNERS

Attempt all questions.

Show all your working clearly

Neat work is a must

2023 SHAPTA JOINT ASSESSMENT BOARD

1. Use a difference of two squares to evaluate

a.
$$63^2 - 37^2$$

(3 mks)

b.
$$9k^2 - y^2$$

(3 mks)

2. Factorize: $d^2 + 10d^2 + 25$ completely and hence find values of d. (4 mks)

3. Expand: (x - 1)(y - 1)

(4 mks)

4. Fatuma is three times as old as Tom, but the sum of their ages is not more

than 32 years. Calculate their greatest possible ages (4 mks)

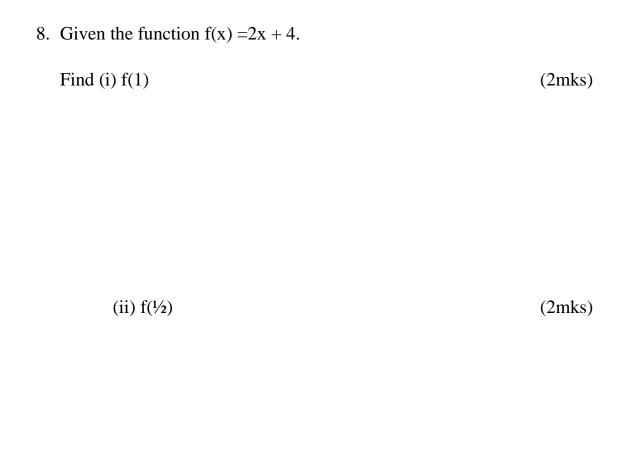
5. A square of area 16 cm^2 is enlarged to square of area A_2 . If the linear scale factor is 4. Find are A_2 . (4 mks)

- 6. Given two sets $A=\{3,4,5,6,7\}$ and $B=\{20,21,24,35,36\}$
 - (a) Draw a papyragram for set A to show the relation "is greater than".

(3mks)

(b) Draw an arrow	diagram to show the relation for two	sets	"is a
factor of"		(31	nks)

7. Represent $x \le 2$ on a number line and state the solution set (4mks)



(iii) $f(x)^{-1}$

(3mks)

9.	A circle of area 81cm ²	and radius	9cm is	mapped	on to ac	circle o	of area
	16cm ² and a diameter	d. calculate	the val	ue of d.		(4mks)

- 10.A(1, 3), B(5, 2), C(3, 6) are vertices of a triangle ABC.
 - a. EFG is the image of ABC under enlargement of scale factor -1 and the center of enlargement (4, 1).
 - b. E'F'G' is the image of ABC under enlargement of scale factor -2 and center of enlargement (4, 1).
 - c. X'Y'Z' is the image of ABC under enlargement of scale factor -1.5 and center of enlargement (0, 0). State the coordinates of the triangles. (Use a graph paper)
 - i. EFG
 - ii. E'F'G'

iii. X'Y'Z' (12 marks)

11. The mathematics department has organized an exhibition. Your class lacks drawings, sketches to display on that day.

Support: pencil, paper, classroom

Resources: knowledge of similar figures.

Knowledge of enlargement.

Task:

You have been chosen to represent your class in this exhibition. Sitting in your position, draw the following objects in your class room in their actual proportions.

- a) Chalkboard
- b) Window

c) Door (12 mks)

END