HERITAGE GLOBAL ACADEMY

2, Ola Iya close, Off Okiki Street, Isawo Road, Owutu Agric-Ikorodu, Lagos

SECOND TERM EXAMINATION 2023/2024 SESSION

Subject: MATHEMATICS

Class: JSS3   **Time: 2HOURS**

SECTION B

INSTRUCTION: ANSWER ANY FOUR QUESTIONS FROM THIS SECTION

QUESTION 1

a. The cost of a pen and 2 exercise books from a store in Lagos Island is #30. The cost of two similar pen and 5 exercise books in Lagos cost #100. What is the cost of a pen and an exercise book?   (4 marks)

b. A ladder 5cm long rest against a wall such that its foot makes an angle 30° with the horizontal. Calculate:
   - i.   The distance of the ladder from the foot of the building   (2 marks)
   - ii.   The height of the building   (2 marks)

c. If y = 3x – 4, what's the value of y when x = -2   (2 marks)

QUESTION 2

a. Using graphical method, solve the simultaneous equation below

$$5x-2y = 11 \dots (1)$$
$$4x-3y = 6 \dots (2)$$ (6marks)

b. A student sitting on a tower 68 meters high observes his principal's car at the angle of depression of 20°. How far is the car from the bottom of the tower to the nearest meter?   (2 marks)

c. I add 55 to a certain number and then divide the sum by 3. The result is four times the first number. Find the number.   (2 marks)

QUESTION 3

a. Using a ruler and a pair of compasses,
   - i.   Construct triangle ABC such that /AB/ = 8cm, ABC = 60° and /BC/ = 6cm.
   - ii.   Measure angle A
   - iii.   Measure the length of AC
   - iv.   Calculate the area of the triangle ABC (correct to the nearest whole number)   (8marks)

b. A water tank is 1.4mm long. 1m wide and 0.7mm deep. then the volume of the tank in liters   (2 marks)
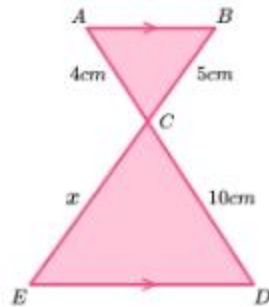
QUESTION 4

a. Copy and complete the table below

shape	Length	Breadth	Perimeter	Area
Rectangle	10cm	5cm		
Square	12cm			
rectangle		9cm		36cm²
Square			100cm²	

(5 marks)

b. Calculate the value of x in the diagram above

(2 marks)

c. A right-angled triangle ABC has its longest side equal to 5cm. If the length of one of the other two sides equals 3cm, calculate the length of its third side. (3 marks)

QUESTION 5

a. A ladder 8m long reaches the side of a window when it makes an angle of 57° with the ground.
  i. What is the height of the window above the ground?
  ii. How far is the foot of the ladder from the bottom of the wall? (5 marks)

b. The angle of elevation of an aeroplane from an observer is 30°. If the airplane is 350m from the horizontal ground, how far is the airplane from the observer? (5 marks)