FORM 2 TERM 1 2021
MATHEMATICS

INSTRUCTIONS.
Answer all the questions in the spaces provided.

1. Evaluate: (3mks)

$$\frac{\frac{5}{6} \text{ of } (4\frac{1}{3} - 3\frac{5}{6})}{\frac{5}{12} \times \frac{3}{25} + 1\frac{5}{9} \div 2\frac{1}{3}}$$

2. A Kenyan company received US dollars which it converted into Kenya Shillings in a commercial bank. The bank buys and sells foreign currencies. Using the table below:

	Buying in (Kshs)	*Selling in (Kshs)*
1 sterling pound	125.78	126.64
1 US dollar	75.66	75.86

   a. If the company received Ksh 15,132,000, calculate the amount received in US Dollars. (2mks)

   b. The company exchanged the above Kenya Shillings into sterling pounds to buy a car in Britain. Calculate the cost of the car to the nearest sterling pound. (2mks)

3. The object shown below is reflected in the line x=-1, followed by a reflection in the line y=0, draw the two images after the two reflections. (3mks)
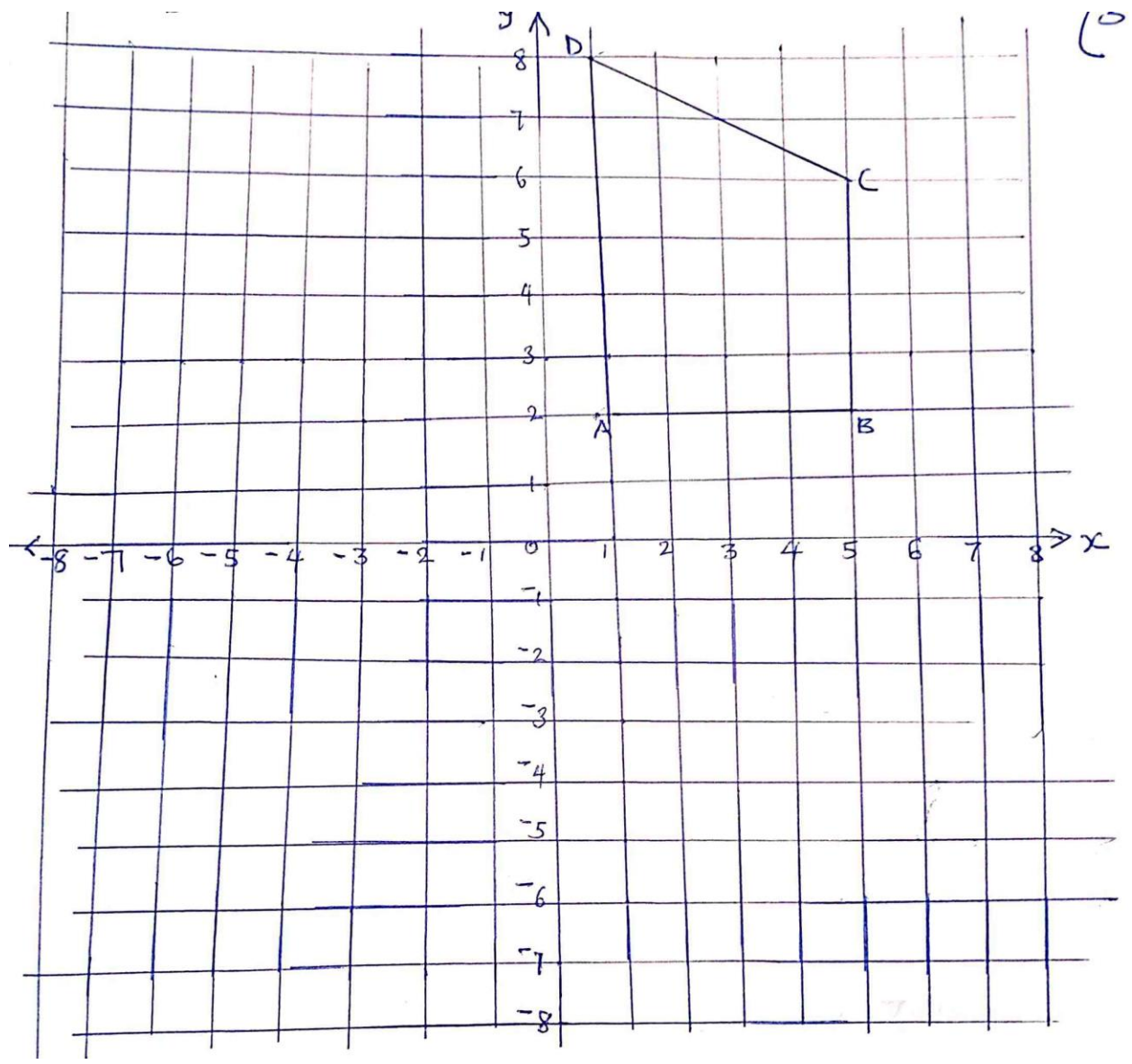
4. A hawk is perched on a tree at a height of 15M above the ground. It spots a chick on the ground at an angle of depression of 25°, calculate the distance of the chick from the base of the tree. (3mks)

5. The figure below shows a regular hexagon, the distance from the centre O of the hexagon to any vertex is 5cm.
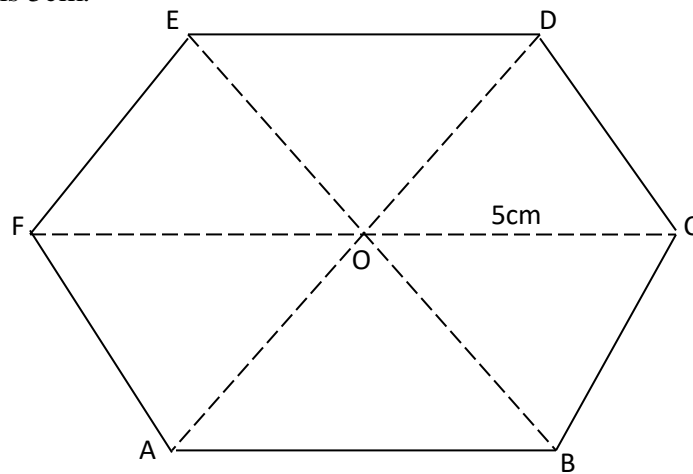
a. Calculate the size, of the exterior angle of the polygon (1mk)

b. Find the area of the hexagon giving your answer correct to 4 s.f. (2mks)

6. If $2^{x+y}=16$ and $4^{2x-y}= \frac{1}{4}$, find the values of x and y.   (5mks)

7. A straight line L1 has a gradient – ½ and passes through the point P(-1,-3). Another line L2 passes through P and is perpendicular to L1. Find:
    a. The equation of L1.   (1mk)

    b. The equation of L2.   (2mks)

8. The scale of a map is 1:50,000. On the map, a coffee plantation coverts an area of $20cm^2$. Find the area of the plantation in hectares.   (2mks)

9. The volume of water in a measuring cylinder is $200cm^3$. When a cube is immersed into the water, the cylinder reading is $543cm^3$. Find
    a. The volume of the cube.   (1mks)

    b. The length of the side of the cube.   (2mks)

10. The figure shown below represents rectangle ABCD which measures 12cm by 9cm. if the shaded area is 68cm^2, find the values of x. (3mks)