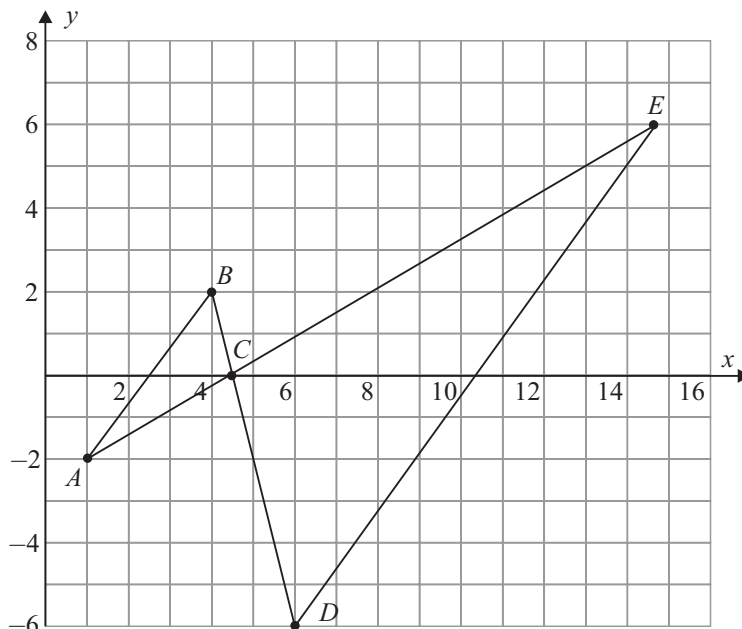


LC 2017: PAPER 2

QUESTION 8 (40 MARKS)

Question 8 (a)

Points: $A(1, -2)$, $B(4, 2)$, $D(6, -6)$, $E(15, 6)$



Question 8 (b)

$A(1, -2)$, $B(4, 2)$

$$\text{Slope of } AB: m_1 = \frac{2 - (-2)}{4 - 1} = \frac{4}{3}$$

$D(6, -6)$, $E(15, 6)$

$$\text{Slope of } DE: m_2 = \frac{6 - (-6)}{15 - 6} = \frac{12}{9} = \frac{4}{3}$$

$$m_1 = m_2 \Rightarrow [AB] \parallel [DE]$$

Question 8 (c)

(i) $A(1, -2)$, $B(4, 2)$, $C(4.5, 0)$

$$A(1, -2) \rightarrow (0, 0)$$

$$B(4, 2) \rightarrow (3, 4)$$

$$C(4.5, 0) \rightarrow (3.5, 2)$$

$$\text{Area } \triangle CBA = \frac{1}{2} |3(2) - 4(3.5)| = \frac{1}{2} |6 - 14|$$

$$= \frac{1}{2} |-8| = 4 \text{ square units}$$

(ii) $|AB| = \sqrt{(4-1)^2 + (2+2)^2} = \sqrt{9+16} = \sqrt{25} = 5 \text{ units}$

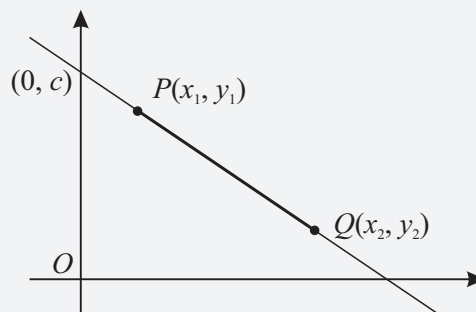
(iii) $|DE| = k|AB| \Rightarrow 15 = k \times 5$

$$\therefore k = 3$$

(iv) $\text{Area } \triangle CDE = k^2 \times (\text{Area } \triangle CBA)$

$$= 3^2 \times 4 = 9 \times 4 = 36 \text{ square units}$$

FORMULAE AND TABLES BOOK Co-ordinate geometry: Line



Slope of PQ [page 18]

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$