

LC 2012 (SET E): PAPER 2

QUESTION 1 (25 MARKS)

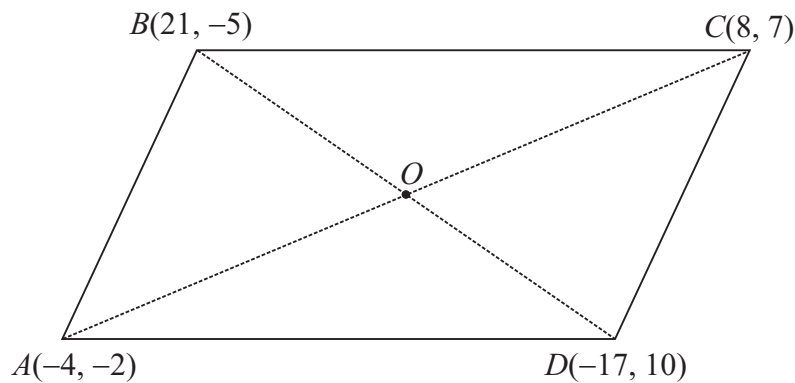
Question 1 (a)

METHOD 1. Check whether both pairs of opposite sides have the same slope (slope formula).

METHOD 2. Check whether both pairs of opposite sides are equal in length (distance formula).

METHOD 3. Check whether the midpoints of the diagonals coincide (diagonals bisecting each other).

Question 1 (b)



Use method 3.

$$\text{Mid-point of } [AC] = \left(\frac{-4+8}{2}, \frac{-2+7}{2} \right) = \left(1, \frac{5}{2} \right)$$

$$\text{Mid-point of } [BD] = \left(\frac{21-17}{2}, \frac{-5+10}{2} \right) = \left(2, \frac{5}{2} \right)$$

Therefore, the quadrilateral given is a parallelogram.

MARKING SCHEME NOTES

Question 1 (a) [Scale 5B, 5B, 5B (0, 3, 5)]

3: • Incomplete statement of method (with some merit)

Question 1 (b) [Scale 10C (0, 4, 8, 10)]

4: • Any reasonable first step

8: • Correct method applied with some error(s)

• Correct method but vertices not taken in correct order (i.e $ABDC$ or equivalent)

• Correct method completed but with no conclusion