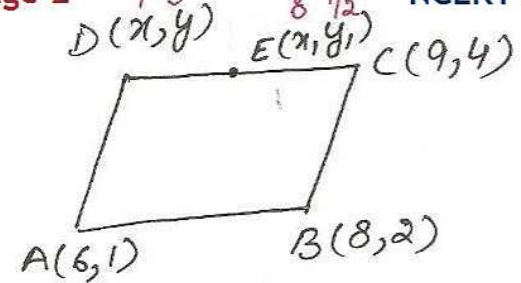
(5)



diagonals of a ||gm bisect each other

$\therefore$ midpoints of AC and BD coincide

$$\frac{8+x}{2} = \frac{6+9}{2} \qquad \frac{y+2}{2} = \frac{1+4}{2}$$

$$\Rightarrow x = 15-8 \qquad y = 5-2$$
$$= 7 \qquad = 3$$

$\therefore D(7,3)$

E is midpoint of CD

$$\therefore x_1 = \frac{7+9}{2} \qquad y_1 = \frac{3+4}{2}$$
$$= \frac{16}{2} \qquad = \frac{7}{2}$$
$$= 8$$

$\therefore E(8, \frac{7}{2})$

$$\text{ar}(\triangle ADE) = \frac{1}{2} \begin{vmatrix} 6 & 1 \\ 7 & 3 \\ 8 & \frac{7}{2} \\ 6 & 1 \end{vmatrix}$$

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$$= \frac{1}{2} \left| 18 - 7 + \frac{49}{2} - 24 + 8 - 21 \right|$$

$$= \frac{1}{2} |50 \cdot 5 - 52|$$

$$= \frac{1}{2} |-1 \cdot 5|$$

$$= \frac{1}{2} \times 1 \cdot 5$$

$$= 0 \cdot 75 \text{ Sq unit}$$