

$$\text{area of } \square ABCD = \frac{1}{2} \begin{vmatrix} 1 & -2 \\ 2 & 3 \\ -3 & 2 \\ -4 & -3 \\ 1 & -2 \end{vmatrix}$$

$$= \frac{1}{2} | 3 + 4 + 4 + 9 + 9 + 8 + 8 + 3 |$$

$$= \frac{1}{2} | 48 |$$

$$= \frac{1}{2} \times 48$$

$$= 24 \text{ sq. units}$$

$$\begin{aligned} AB &= \sqrt{(2-1)^2 + (3+2)^2} \\ &= \sqrt{1^2 + 5^2} \\ &= \sqrt{26} \end{aligned}$$

$$\text{area}(\square ABCD) = b \cdot h$$

$$24 = \sqrt{26} \times h$$

$$\Rightarrow h = \frac{24}{\sqrt{26}}$$

$$= \frac{24\sqrt{26}}{26}$$

$$= \frac{12}{13} \sqrt{26} \text{ units}$$