

Thursday 19 November 2020 19:03

$$AB \neq BA$$

$$(A.B) = \begin{bmatrix} \boxed{1} & \boxed{3} \\ \boxed{-1} & \boxed{3} \end{bmatrix} \cdot \begin{bmatrix} \boxed{2} & \boxed{0} \\ \boxed{-1} & \boxed{1} \end{bmatrix} = \begin{bmatrix} a_{11}b_{11} + a_{12}b_{21} & a_{11}b_{12} + a_{12}b_{22} \\ a_{21}b_{11} + a_{22}b_{21} & a_{21}b_{12} + a_{22}b_{22} \end{bmatrix}$$

$$= \begin{bmatrix} (1)(2) + (3)(-1) & (1)(0) + (3)(1) \\ (-1)(2) + (3)(-1) & (-1)(0) + (3)(1) \end{bmatrix}$$

$$= \begin{bmatrix} 2-3 & 0+3 \\ -2-3 & 0+3 \end{bmatrix} = \begin{bmatrix} -1 & 3 \\ -5 & 3 \end{bmatrix}$$

2×2

$$A = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix} \quad B = \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{bmatrix}$$