

Question 1 Determine which of the following products are defined.

$$AB = \begin{bmatrix} 1 & 3 & 4 \end{bmatrix} \begin{bmatrix} 0 \\ -3 \\ 2 \end{bmatrix}$$

Multiple Choice:

(a) defined ✓

(b) undefined

$$AB = \begin{bmatrix} 0 \\ -3 \\ 2 \end{bmatrix} \begin{bmatrix} 1 & 3 & 4 \end{bmatrix}$$

Multiple Choice:

(a) defined ✓

(b) undefined

$$AB = \begin{bmatrix} 1 & 3 \\ 0 & 4 \end{bmatrix} \begin{bmatrix} 0 & 7 \\ -3 & 1 \\ 2 & 0 \end{bmatrix}$$

Multiple Choice:

(a) defined

(b) undefined ✓

Question 2 Let $A = \begin{bmatrix} 11 & 0 & 12 \\ 7 & 6 & -1 \\ 0 & -3 & 14 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 \\ 0 & -1 \\ 3 & 1 \end{bmatrix}$. Compute the following matrices.

$$AB = \begin{bmatrix} \boxed{23} & \boxed{34} \\ \boxed{4} & \boxed{7} \\ \boxed{42} & \boxed{17} \end{bmatrix}$$

$$A^T = \begin{bmatrix} \boxed{11} & \boxed{7} & \boxed{0} \\ \boxed{0} & \boxed{6} & \boxed{-3} \\ \boxed{12} & \boxed{-1} & \boxed{14} \end{bmatrix}$$

$$B^T = \begin{bmatrix} \boxed{1} & \boxed{0} & \boxed{3} \\ \boxed{2} & \boxed{-1} & \boxed{1} \end{bmatrix}$$

$$4B = \begin{bmatrix} \boxed{4} & \boxed{8} \\ \boxed{0} & \boxed{-4} \\ \boxed{12} & \boxed{4} \end{bmatrix}$$
