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.*

$$AB = \begin{bmatrix}\boxed{47} & \boxed{34}\\\boxed{4} & \boxed{7}\\\boxed{42} & \boxed{17}\end{bmatrix}$$

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

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

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