Name:_____

1. $\begin{bmatrix} -2 & 2 & 4 \end{bmatrix} \times \begin{bmatrix} 0 & 2 & -1 \end{bmatrix}$

2. $\left\| \begin{bmatrix} 4 & -3 & 2 \end{bmatrix} \right\|$

3. What is the angle between the following two vectors (in radians)?
$\begin{bmatrix} -1 & 3 & 3 \end{bmatrix}, \begin{bmatrix} 3 & -4 & -2 \end{bmatrix}$

4. $\left\| \begin{bmatrix} 0 & 0 & -1 \end{bmatrix} \right\|$

5. What is the relationship between the following two vectors?
$\begin{bmatrix} 2 & 4 & -1 \end{bmatrix}, \begin{bmatrix} -2 & -5 & -3 \end{bmatrix}$

   (a) They point in the same direction

   (b) They point in opposite directions

   (c) They are perpendicular

6. $\begin{bmatrix} 0 & -3 & 3 \end{bmatrix} + \begin{bmatrix} -2 & 0 & -5 \end{bmatrix}$

7. $\begin{bmatrix} -4 & 0 & -5 \end{bmatrix} \cdot \begin{bmatrix} -1 & -5 & 0 \end{bmatrix}$

8. Normalize $\begin{bmatrix} -3 & 0 & 3 \end{bmatrix}$