Assignment WW-Orthogonality

1. (1 point) Find the dot product of

$$\vec{x} = \begin{bmatrix} -8 \\ 4 \end{bmatrix} \text{ and } \vec{y} = \begin{bmatrix} 2 \\ 0 \end{bmatrix}.$$

$\vec{x} \cdot \vec{y} =$ _____.

Correct Answers:

- `-8*2+4*0`

2. (1 point) Find the length of the vector $\vec{x} = \begin{bmatrix} 5 \\ 8 \end{bmatrix}$.

$\|\vec{x}\| =$ _____.

Correct Answers:

- `sqrt(5^2+8^2)`

3. (1 point) Find the dot product of

$$\vec{x} = \begin{bmatrix} 2 \\ 2 \\ -2 \end{bmatrix} \text{ and } \vec{y} = \begin{bmatrix} -1 \\ 1 \\ 2 \end{bmatrix}.$$

$\vec{x} \cdot \vec{y} =$ _____.

Correct Answers:

- `-4`

4. (1 point)

Find the value of k for which the vectors

$$\begin{bmatrix} -2 \\ -5 \\ 3 \\ 1 \end{bmatrix} \text{ and } \begin{bmatrix} 3 \\ 3 \\ 2 \\ k \end{bmatrix}$$

are orthogonal.

$k =$ _____.

Correct Answers:

- `-(-15)/1`