

"QUIZ" for Lecture 2

NAME: (print!) _____ Section: _____

E-MAIL ADDRESS SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com
(Attachment: q2FirstLast.pdf) ASAP BUT NO LATER THAN FRIDAY Sept. 11,
8:00pm _____

1. Determine whether the two vectors are orthogonal and if not, whether the angle between them is acute or obtuse. a. $\langle 1, 1, 1 \rangle$, $\langle 3, -2, -1 \rangle$.

b. $\langle 4, 3 \rangle$, $\langle 2, -4 \rangle$.

$$a. \langle 1, 1, 1 \rangle \cdot \langle 3, -2, -1 \rangle = (1)(3) + (1)(-2) + (1)(-1) = 0$$

perpendicular

$$b. \langle 4, 3 \rangle \cdot \langle 2, -4 \rangle = (4)(2) + (3)(-4) = -4$$

2. Calculate $\mathbf{v} \times \mathbf{w}$, if

$$\mathbf{v} = \langle 0, 1, -1 \rangle \quad , \quad \mathbf{w} = \langle 1, -1, 0 \rangle .$$

$$\begin{vmatrix} i & j & k \\ 0 & 1 & -1 \\ 1 & -1 & 0 \end{vmatrix} = -i - j - k$$
$$= \langle -1, -1, -1 \rangle$$