

COMPSCI/MATH 290-04 Background Knowledge Assessment

1/14/2016

Fill out the answers to the questions below to the best of your ability. If you do not know how to approach a particular question, please skip and do not guess. *This is completely anonymous and ungraded!*

1. What is the unit normal of the triangle with vertices $(-1, 0, 0)$, $(1, 0, 0)$, $(0, 1, 0)$?
2. Circle the letters corresponding to pairs of vectors which are perpendicular
 - a. $(1, 1, 0)$ and $(0, 0, 1)$
 - b. $(-1, 1, 0)$ and $(1, -1, 0)$
 - c. $(-2, 1, 0)$ and $(1, 2, 0)$
 - d. $(1, 2, 1)$ and $(-3, 1, 1)$
3. What is parallel projection of the vector $(1, 1, 3)$ onto the vector $(1, 1, 1)$?
4. Fill in the blank: $e^{i\theta} = \cos(\theta) + \underline{\hspace{2cm}}$
5. Circle the letters below corresponding to vectors which are eigenvectors of the matrix $\begin{bmatrix} 2 & 3 \\ 0 & -3 \end{bmatrix}$
 - a. $(2, 1)$
 - b. $(1, 0)$
 - c. $(0, 3)$
6. The Fourier Transform of $\delta(t)$ is $\underline{\hspace{2cm}}$
7. Circle one of the items below that best approximates your plans for the class
 - a. I am enrolled in the class and plan to stay
 - b. I am enrolled in the class but I may drop
 - c. I am not enrolled in the class but would like to enroll. (Are you on the waitlist? YES/NO)
 - d. I am not enrolled in the class and do not plan to enroll