Reminders

- Your Quiz 1 is due Thursday night (**1/18/2024**) by 9PM. Do not wait until the last minute to start the Quiz! (*this is always when there is an emergency or the wifi is bad!*)
- Make sure you show all your work for the weekly reviews! Grading is based completion and on method. (not just the final answer)
- Selected answers are provided on the last page of this document to allow you to check if you are on the right track. If you would like to discuss the solutions/answers for the problems not provided please see your TA, visit office hours, or visit the MLC.
- Scan and upload this document by 11:59PM Thursday night (**1/18/2024**) to receive credit. (see syllabus for details)

Example 1. True / False: The vectors $\langle a, a^2, 1\rangle$ and $\langle -a, 1, 0\rangle$ are orthogonal to one another.

Example 2. Consider the vectors $\mathbf{u} = \langle 1, 2, 3\rangle$ and $\mathbf{v} = \langle 4, 0, -3\rangle$. Find

$$\text{proj}_{\mathbf{u}}(\mathbf{v}) \cdot \langle 1, 1, 1\rangle .$$

Example 3. Consider the triangle with vertices: $P(1, 1, 1)$, $Q(1, -3, 2)$, and $R(-3, 2, 4)$. Find $\angle Q$ (in radians)

Example 4. Find the angle between a diagonal of a unit cube and one of its edges (in radians).

Example 5. Find a unit vector, $\mathbf{w} = a\mathbf{i} + b\mathbf{j} + c\mathbf{k}$, that is perpendicular to both $\mathbf{u} = 5\mathbf{i} - 3\mathbf{k}$ and $\mathbf{v} = 2\mathbf{i} + 7\mathbf{j}$. What is $|a|$?

Example 6. Consider the triangle with vertices: $P(1, 1, 1)$, $Q(1, -3, 2)$, and $R(-3, 2, 4)$. Find the area of the triangle.

Selected Final Answers: (rounded to 3 decimal places similar to D2L Quizzes)

Ex2 :	-2.143	**Ex3 :**	0.862
Ex5 :	0.509	**Ex6 :**	10.5