MA 261 Quiz 1

January 15, 2018

If you do not know how to do any one of these problems, circle **"(E) I don't know"** as your answer choice. You will receive **two points** for doing that. **Each problem** is worth **five points**. You get **two points** for writing your **full name** and **three points** for writing your **section number**.

Problem 1.1. Find a pair of unit vectors $\mathbf{u}_1$ and $\mathbf{u}_2$ which make a 60° angle with $\mathbf{v} = \langle \sqrt{3}, 1 \rangle$.

(A) $\mathbf{u}_1 = \langle 1, 0 \rangle, \mathbf{u}_2 = \langle -\sqrt{3}, -1 \rangle$.
(B) $\mathbf{u}_1 = \left\langle \frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2} \right\rangle, \mathbf{u}_2 = \left\langle \frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2} \right\rangle$.
(C) $\mathbf{u}_1 = \langle 1, 0 \rangle, \mathbf{u}_2 = \langle \sqrt{3}, -1 \rangle$.
(D) $\mathbf{u}_1 = \langle 0, 1 \rangle, \mathbf{u}_2 = \left\langle \frac{\sqrt{3}}{2}, -\frac{1}{2} \right\rangle$.
(E) I don't know.

Problem 1.2. Find the area of the triangle with vertices at $(2, 1, 1)$, $(1, 2, 1)$, and $(1, 1, 2)$.

(A) $7/2$.
(B) $3/2$.
(C) $\sqrt{2}$.
(D) $\sqrt{3}/2$.
(E) I don't know.

Problem 1.3. Find the equation of the line passing through the points $(1, -2, 1)$ and $(2, 3, -1)$.

(A) $x + 5y + 2z = -7$
(B) $x + 5y - 2z = -11$
(C) $-x + 5y + z = -10$
(D) $x + y + z = 0$
(E) I don't know.