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Assignment readQ6-3 due 03/29/2024 at 08:01am EDT

ma217-w24

Problem 1. (1 point)

Suppose that $A = \begin{bmatrix} \vec{v}_1 & \vec{v}_2 & \vec{v}_3 \end{bmatrix}$, with

$$\|\vec{v}_1\| = 4.24264$$
, $\|\vec{v}_2\| = 3.60555$, and $\|\vec{v}_3\| = 3.60555$.

Suppose also that

$$\|\vec{v}_2^{\perp}\| = 2.91548$$
 and $\|\vec{v}_3^{\perp}\| = 2.91043$.

What is $|\det(A)|$?

 $|\det(A)| = \underline{\hspace{1cm}}$

Answer(s) submitted:

4.24264 · 2.91548 · 2.91043

submitted: (correct)
recorded: (correct)

Problem 2. (1 point)

Consider the 2-parallelepiped in \mathbb{R}^4 defined by the vectors

$$\vec{v}_1 = \begin{bmatrix} 2\\3\\3\\-2 \end{bmatrix} \quad \text{and} \quad \vec{v}_2 = \begin{bmatrix} -3\\2\\2\\1 \end{bmatrix}.$$

What is the 2-volume (area) of this?

vol = _____

Answer(s) submitted:

√452

submitted: (correct) recorded: (correct)

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Problem 3. (1 point)

Use Cramer's rule to solve the linear system

$$3x + 4y = -1, -4x + 3y = 3.$$

Using Cramer's rule,

Answer(s) submitted:

- −15
- 25
- -
- 5
- 25
- \bullet $\frac{1}{5}$

submitted: (correct) recorded: (correct)