Problem 1. **(1 point)**

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

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

Suppose also that

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

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

$|\det(A)| =$ _____

Answer(s) submitted:

- $4.24264 \cdot 2.91548 \cdot 2.91043$

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:

- $\sqrt{452}$

submitted: (correct)
recorded: (correct)

Problem 3. **(1 point)**

Use Cramer's rule to solve the linear system

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

Using Cramer's rule,

$x =$ _____ / _____ = _____
$y =$ _____ / _____ = _____

Answer(s) submitted:

- -15
- 25
- $-\frac{3}{5}$
- 5
- 25
- $\frac{1}{5}$

submitted: (correct)
recorded: (correct)