LESSON 4

MA 16200 · SPRING 2023

DR. HOOD

WARM UP

Consider the vector $\vec{v} = \langle 1, 2, 3 \rangle$. Which of the following vectors is orthogonal to $\vec{v}$?

a) $\langle 2, -1, 0 \rangle$

b) $\langle 0, 3, 2 \rangle$

c) $\langle -3, 2, 1 \rangle$

$\vec{u}$ is orthogonal to $\vec{v}$ if:

$\vec{u} \cdot \vec{v} = 0$

$2 \cdot 1 + (-1) \cdot 2 + 0 \cdot 3$

$= 2 - 2 + 0 = 0$

ANNOUNCEMENTS

- **Dr. Hood's Office Hours in MATH 844**
  - Mon, Wed at 12:30 – 1:30pm and Fri at 1:00 – 2:00pm
- **TA office hours at the MRR in WTHR 313**
  - https://www.math.purdue.edu/academic/courses/helproom
- **Flyers for Student Organizations & Opportunities**
  - Brightspace > "Content" > "Week 2" > "Flyers for …"

POLL 1

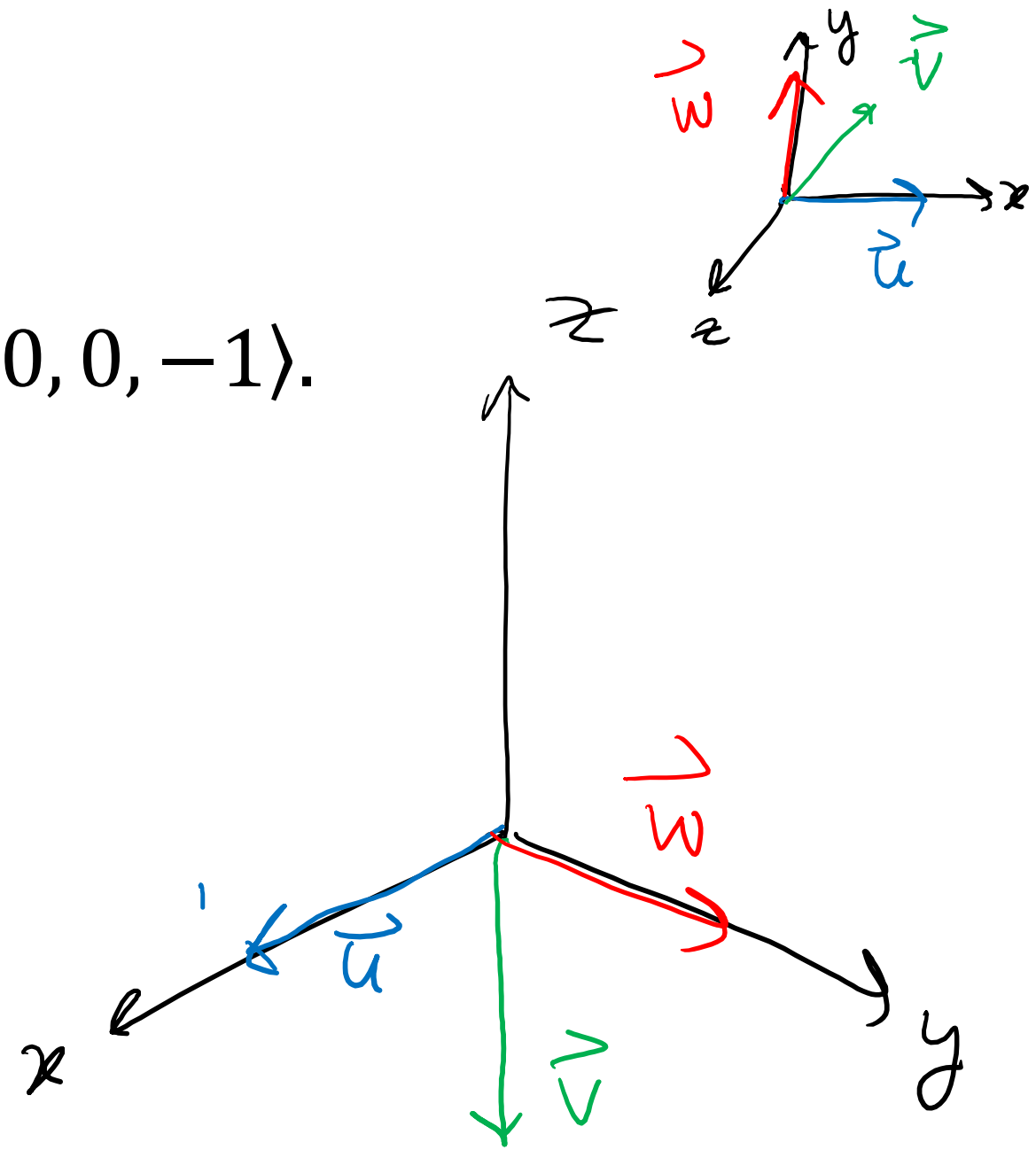
Let $\vec{u} = \langle 1, 0, 0 \rangle$ and $\vec{v} = \langle 0, 0, -1 \rangle$.

What is $\vec{w} = \vec{u} \times \vec{v}$?

a) $\langle 0, -1, 0 \rangle$

b) $\langle 1, 0, -1 \rangle$

c) $\langle 0, 1, 0 \rangle$



POLL 2

Assume the points A, B, and C all lie on a line (collinear). Which of the following statements is true?

a) $\overrightarrow{AB} \cdot \overrightarrow{AC} = 0$

b) $\left|\overrightarrow{AB} \times \overrightarrow{AC}\right| = 0$

c) $\overrightarrow{AB} \times \overrightarrow{AC} = \overrightarrow{BC}$