Quiz #1 for Calculus 3 (MATH-UA.0123-001)

Problem 1. What is $\hat{i} \times \hat{j}$? [*1 point*]

Problem 2. What is $\hat{j} \times \hat{i}$? [*1 point*]

Problem 3. What is $\vec{a} \cdot (\vec{a} \times \vec{b})$? [*2 points*]

Problem 4. What is $\left|\hat{i} \cdot (\hat{j} \times \hat{k})\right|$ equal to? What shape is this the volume of? [*2 points*]

Problem 5. If the triple product for three vectors is equal to zero, what can you say about the vectors geometrically? [*2 points*]

Problem 6. A force of 10 N is applied *perpendicularly* to the end of a lever that is 1 m long. What is the magnitude of the torque vector? [*2 points*]