1. (2 points) What is the length of the cross product $\mathbf{u} \times \mathbf{v}$ of two vectors?
   
   (a) $||\mathbf{u}|| \cdot ||\mathbf{v}|| \cdot \sin \theta$
   
   (b) $||\mathbf{u}|| \cdot ||\mathbf{v}|| \cdot \cos \theta$
   
   (c) $||\mathbf{u}|| \cdot ||\mathbf{v}|| \cdot \sin \theta$
   
   (d) $||\mathbf{u}|| \cdot ||\mathbf{v}|| \cdot \cos \theta$

2. (2 points) The cross product of $(1, 0, 0)$ and $(0, 0, 1)$ is one of the following two vectors. Determine which is appropriate (for example, using the right-hand rule).
   
   (a) $(0, 1, 0)$
   
   (b) $(0, -1, 0)$

3. (2 points) Give a normal vector for the plane $2x - 5y + \sqrt{10}z + 7 = 0$.

4. (4 points) Compute the cross product of the vectors $(1, 3, 1)$ and $(-1, 2, -2)$. 