1. Let $\vec{\mathbf{a}} = \langle 2, -1 \rangle$ and $\vec{\mathbf{b}} = \langle -1, 4 \rangle$
   (a) Find $\vec{\mathbf{u_a}}$, the unit vector in the same direction as $\vec{\mathbf{a}}$
   (b) Find $\vec{\mathbf{u_b}}$
   (c) Find the angle between $\vec{\mathbf{a}}$ and $\vec{\mathbf{b}}$
   (d) Find the angle between $\vec{\mathbf{u_a}}$ and $\vec{\mathbf{u_b}}$
   (e) Give two vectors orthogonal to $\vec{\mathbf{a}}$

2. Repeat #1 for $\vec{\mathbf{a}} = \langle 1, -3, 2 \rangle$ and $\vec{\mathbf{b}} = \langle 3, 0, 1 \rangle$

3. Write an equation that describes when a vector $\langle x, y, z \rangle$ is orthogonal to vector $\vec{\mathbf{a}}$ from #2