Let $\vec{\mathbf{v}} = (1, 5)$, $\vec{\mathbf{w}} = (2, 3)$, and $\vec{\mathbf{u}} = (1, 3, -2)$.

1. Find the projection of $\vec{\mathbf{v}}$ onto $\vec{\mathbf{w}}$

2. Find the projection of $\vec{\mathbf{w}}$ onto $\vec{\mathbf{v}}$

3. Find two vectors perpendicular to $\vec{\mathbf{v}}$.

4. Find three vectors perpendicular to $\vec{\mathbf{u}}$.