

**Quiz 9** ————— **Math 1272**

Let  $\vec{v} = 4\vec{i} - 3\vec{j}$  and  $\vec{w} = 2\vec{i} + 1\vec{j} - 5\vec{k}$ .

**1** Find the angle between  $\vec{v}$  and  $\vec{w}$ .

**2** Find the projection of  $\vec{v}$  onto  $\vec{w}$ , that is  $\text{Proj}_{\vec{w}}\vec{v}$ .

**3** Find a vector perpendicular to the plane that passes through the points  $(1, 2, 3)$ ,  $(2, 0, -1)$ , and  $(0, 3, 1)$ .

**4** For  $\vec{u} = (1, 2, 3)$ , find a vector perpendicular to  $\vec{u}$  and another vector parallel to  $\vec{u}$ .