Quiz 2
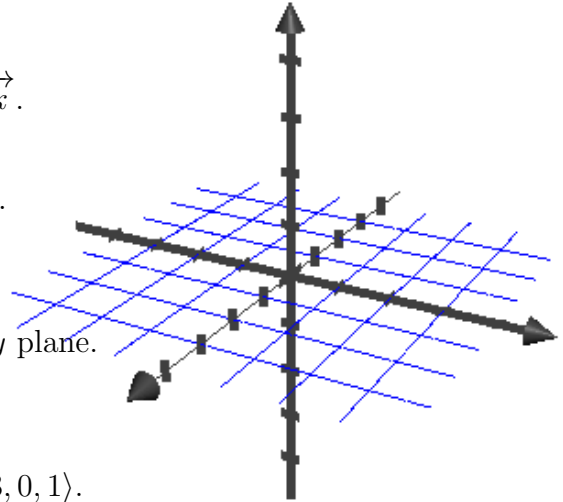
This is a two-stage quiz.During the first stage, use your knowledge & calculator to take this quiz. You have 15 min. In the second stage. You are now welcome to use your books, notes, and students in the class to retake the same quiz. You have 15 min. to complete the quiz and to build one solution to be turned in.

Show *all* your work.
Reasonable supporting work must be shown for
any partial credit.

1. Consider $\vec{r} = (3 - 2t)\,\vec{i} + (-1)\,\vec{j} + (-2 + t)\,\vec{k}$.

   (a) [1] What kind of mathematical object is described as t ranges between $-\infty$ and ∞.

   (b) [2] Find a point where $\vec{r}$ intersects the xy plane.

   (c) [3] Find the angle that $\vec{r}$ makes with $\langle -3, 0, 1 \rangle$.

2. Consider the bicycle pedal shown on the right. A horizontal force of 20 lbs is applied to the handle as shown.

   (a) [1] Identify an axis on the picture and write the force as a vector in 3D.

   (b) [3] Find the *vector* of the torque created about the pivot point P.