Problem Q4.2. *Solution.* Based on our matrix QA, it appears that Q takes a vector and maintains its length, but rotates it so that the vector lies on an axis. For example, Q takes the vector $\begin{bmatrix} 1 & -1 & 3 \end{bmatrix}^T$ in the first column of A and rotates it so it lies on the x-axis. Similarly, the vector in the second column of A lies on the y-axis, and the vector in the third column of A lies on the z-axis.