

Question #17344 Given vector $u = (-1, 1, 2)$ and vector $v = (0, 1, 0)$. a) $u \times v$, and
b) Show that $u \times v$ is orthogonal to both u and v .

Solution. $w = u \times v = \begin{pmatrix} i & j & k \\ -1 & 1 & 2 \\ 0 & 1 & 0 \end{pmatrix} = -2i + 0j - k = (-2, 0, -1)$ b) Calculate
 $(w, u) = -2 + 2 = 0$ and $(w, v) = 0 + 0 + 0 = 0$, thus we obtain the desired result.