Problem

What are the possible real eigenvalues of an orthogonal $n \times n$ matrix A? (Explain why)

(if A is an orthogonal matrix, then the linear transformation $T(\vec{x}) = Ax$ preserves length...)

Problem

Consider the matrix $A = \begin{pmatrix} 0 & 6 & 8 \\ \frac{1}{2} & 0 & 0 \\ 0 & \frac{1}{2} & 0 \end{pmatrix}$ and vectors $v = \begin{pmatrix} 16 \\ 4 \\ 1 \end{pmatrix}$ $w = \begin{pmatrix} 2 \\ 2 \\ 2 \end{pmatrix}$

Which are eigenvectors? What are their eigenvalues?

Problem

Find the eigenvalues of the matrices : $A = \begin{pmatrix} -5 & 7 \\ 6 & 9 \\ 8 & 3 \end{pmatrix}, B = (9)$