Given that
$$\vec{v}_1=\begin{bmatrix} -1\\2 \end{bmatrix}$$
 and $\vec{v}_2=\begin{bmatrix} 0\\-1 \end{bmatrix}$ are eigenvectors of the matrix

$$A = \left[\begin{array}{cc} 0 & 0 \\ -4 & -2 \end{array} \right],$$

determine the corresponding eigenvalues.

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.