

Q A is a $n \times n$ Matrix with real entries then PT

$$\det(A^2 + I_n) \geq 0$$

Ans $\det(A^2 + I_n) = \det(A + iI_n)(A - iI_n)$
 $= \det(A + iI_n) \overline{\det(A + iI_n)}$
 $= \det(M) \overline{\det(M)}$
 $= z \bar{z} = |z|^2$
 $= |\det(M)|^2 \geq 0$