

QUESTION

State a condition on the matrix \mathbf{A} for the set of n inhomogeneous equations in n unknowns $\mathbf{AX} = \mathbf{0}$ to have a non-zero solution.

ANSWER

There is a non-zero solution of $\mathbf{AX} = \mathbf{0}$ if $\det \mathbf{A} = 0$.