
Exercise 1 For square matrices A and B . True or False? If False, you should come up with a counterexample. If True, can you give a proof?

1. If λ is an eigenvalue of A , then $-\lambda$ is an eigenvalue of A^{-1} .

Multiple Choice:

- (i) True
- (ii) False

2. If λ is an eigenvalue of A , then $\lambda - c$ is an eigenvalue of $A - cI$.

Multiple Choice:

- (i) True
- (ii) False

3. If λ is an eigenvalue of A , then 2λ is an eigenvalue of $2A$.

Multiple Choice:

- (i) True
- (ii) False