

# eigenvalue decomposition summarized

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$$Q^{-1}AQ = D \quad \text{diagonalization of } A$$



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- Under what condition would  $Q^{-1}$  exist?
  - ▶ If the columns of  $Q$  are linearly independent
  - ▶ i.e. if  $A$  has  $n$  linearly independent eigenvectors
  - ▶ i.e. if  $A$  has  $n$  distinct eigenvalues

