

Graph-Theoretic Methods

Homework #1 (2012-2013)

Q1: What is the sum of the eigenvalues of the graph Laplacian?

Q2: Recall that the vertex incidence matrix Q of a graph, a rectangular matrix with a row for each edge and a column for each vertex that has the property that $L = Q^T Q$. $Q Q^T$ is a matrix that has the same eigenvalues as L . Provide an interpretation for $Q Q^T - 2I$.