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Assignment 1

1. Let be the graph on two vertices with one edge.

As we see , where .

For any graph , we define:

For a graph we define the Laplacian matrix as follows:

1. As with circulations, the set of all potential differences in D is closed under addition and scalar multiplication and, hence, is a vector space.

Analogous to the function associated with a cycle there is a function associated with a bond B. Let B = [S, S̅] be a bound of D. We define by

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It can be verified that