

This project asks you to create two examples of weighted graphs with certain properties.

(a) Create a weighted graph such that meets the following requirements.

- There are at least two different shortest paths (that is, two distinct paths which have the same total length) between vertex  $a$  and vertex  $b$ .
- Every edge has a different weight.
- The two shortest paths pass through a different number of vertices.

Give the two shortest paths.

(b) Create a weighted graph such that meets the following requirements.

- There are two shortest paths.
- Every edge has a different weight.
- The two paths pass through the same number of vertices.

Give the two shortest paths.