# 1 Networks

In your group, brainstorm examples of three different networks that you are familiar with.

# 2 Graphs

Let's practice creating graphs to represent networks. Use the interactive as needed if it is helpful to recall the various components that comprise a graph. After you have created a graph, answer the following questions.

(a) Which vertex in your graph has the highest degree?

(b) Is your graph connected?

(c) What do your previous answers mean in the context of your network?

**Remark 2.1 A map of Central America and the Carribean.**


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- Create a graph whose vertices represent Mexico, Cuba, Haiti, Dominican Republic, Guatemala, Belize, Honduras, and El Salvador. Two countries are related if they share a physical border.

  Add Vertex Add Edge Add Label

  Delete Last Component

**Figure**: A blank space to construct a graph.

- Create a graph whose vertices represent you and a group of your friends. Two people are related if they know each other and are friends.

  Add Vertex Add Edge Add Label

  Delete Last Component

**Figure**: A blank space to construct a graph.

- Create a graph which represents a network that your group identified earlier. You may simplify the network or represent just part of the network to make this achievable in the timeframe available.

  Add Vertex Add Edge Add Label

  Delete Last Component

# 3 Directed Graphs

In your group, brainstorm three networks that you think would be best represented as a *directed* graph. Then pick one of these networks to create a directed graph for below. You may simplify the network or represent just part of the network to make this achievable in the timeframe available.

Use the interactive as needed if it is helpful to recall the various components that comprise a directed graph.

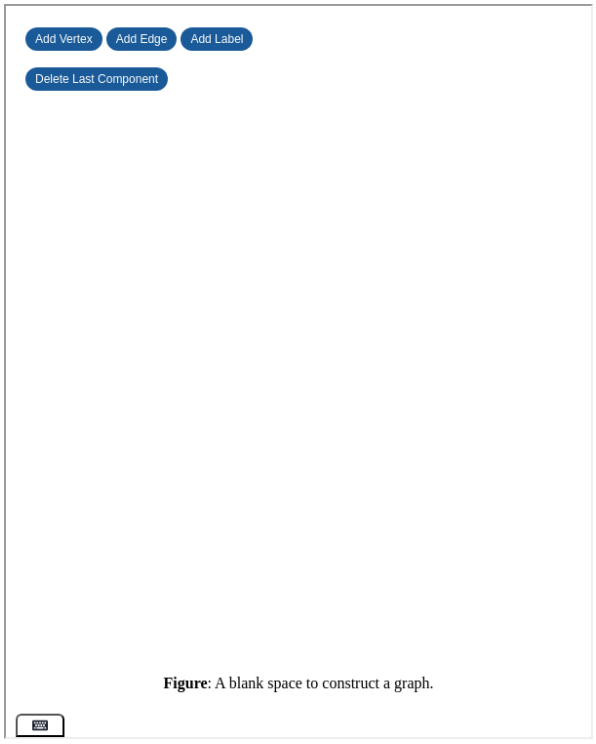


**Figure**: A blank space to construct a graph.