Name: Example Answers _____ Date: _____ Class: _____

Social Networks Assessment

Answer the following writing prompts.

1. Explain the graph theory vocabulary: node, edge, betweenness centrality, and degree on interaction.

   A node represents a point on the graph. In this activity, the nodes were my friends and family. An edge represents a connection between nodes. The edges in my social network graph represent a contact between two people. Betweenness is a measure of centrality for a particular node on the graph. In our activity, the nodes with the highest betweenness were people with the most contacts with other people. Degree of interaction is the number of edges connected to a node.

2. Explain what the size and color of the nodes on the Cytoscape graphs mean.

   The larger nodes represent people with more contacts and communication with others. Depending on the Cytoscape coloring scheme selected, the colors with the fewest interactions and the most interactions will be different, one a cool color and the other a warm color. Overall, the size and color of the nodes shows the importance of people relative to one another.

3. Describe some engineering applications of graph theory.

   Graph theory is useful to represent a wide range of complex systems in a visual way. Computer science [engineering] applications of graph theory include data mining, image segmentation, clustering and network applications. In addition, electrical engineers use graph theory to represent electrical component interactions in circuits, and structural engineers use graph theory to represent structural composition.