# 341 Introduction to Bioinformatics:

Biological Networks

Tutorial 3 – February 11, 2010

1. Why do we use network properties?

2. Name network properties and describe how they can be computed.

3. In the graph below, compute:

   a. Degree distribution

   b. Clustering coefficient

   c. Clustering Spectrum

   d. Average network diameter

   e. Spectrum of shortest path lengths

   f. The following centralities for all of its nodes:

      1) Degree centrality

      2) Closeness centrality

      3) Eccentricity centrality

      4) Betweenness centrality

      Present results as seen in class.
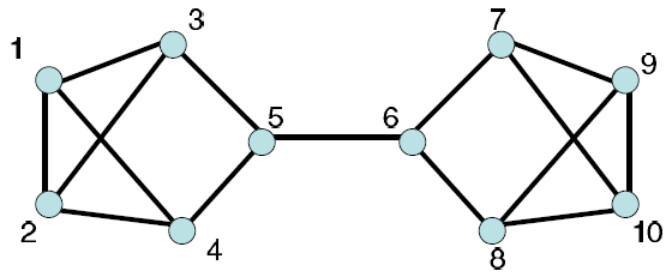
4. How can Erdos-Renyi random graphs be constructed?

5. What are network motifs? What are graphlets? What are the similarities/differences?