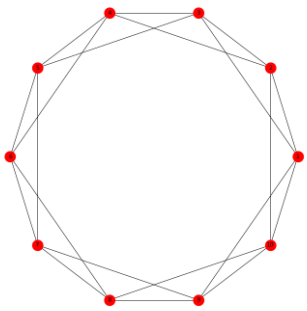
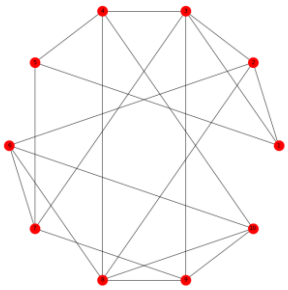
HOMEWORK CLASS 10

Concerning the attached Netlogo model of 'Information Diffusion', please modify the model and return the code with replies in the Info tab.

1. Modify the model so it will include another optional Watts-Strogatz small word network. A Watts-Strogatz network is a kind of network in which the distance between any two nodes is small comparing with the logarithm of the number of nodes (small world property). The Watts-Strogatz method of building networks starts with the creation of a ring network with some arbitrary number of neighbours:



   An then rewiring part of the network according to a given probability of rewire



   Configure the new network so that nodes in the ring will initially have 2 neighbours in each side. A slider should determine the probability of rewire.
2. Modify your interface so that you can have a monitor for the mean degree of the network; a monitor for the mean shortest path length and a plot with the degree distribution.
3. Can you justify with the aid of the monitors the logic of the Watts-Strogatz method for building small world networks?
4. Cancel broadcast-influence and seed one turtle with adoption. What happens to the diffusion of information in the new network when you modify rewiring?
5. Which of the three types of network has a degree distribution closer to a power law?