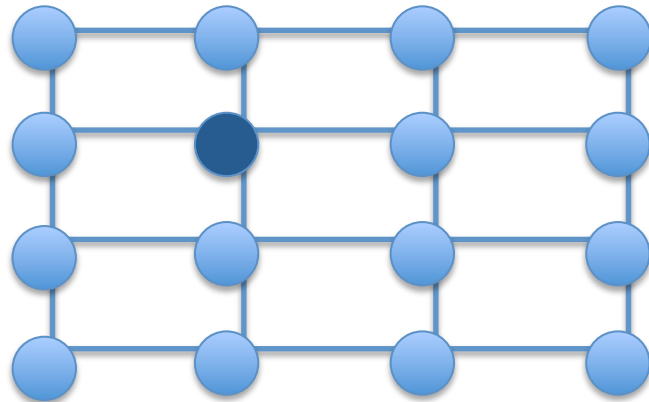


12 – Network Analysis – Oct 10, 2016

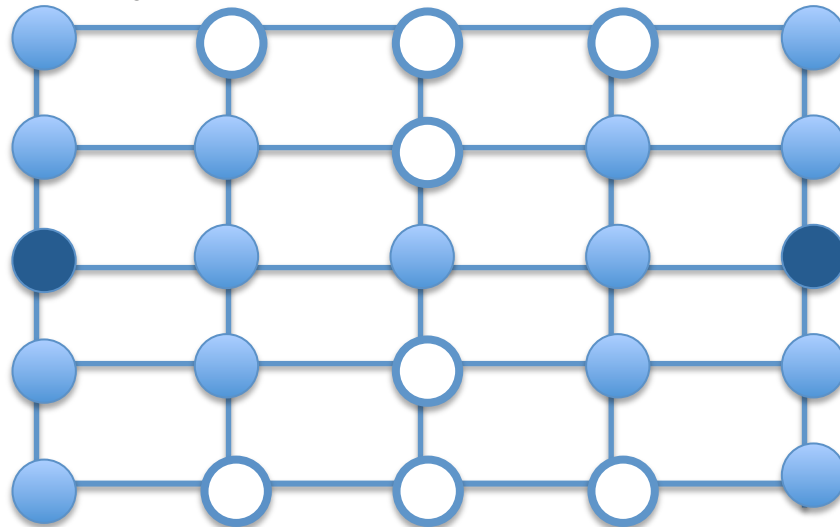
Assume the following network of nodes that are connected in a form of a 4x4 grid.



(Q1) Assuming the dark node (in position 2,2) is an infected node and a 1-threshold model of infection, how many time steps will it take for the entire network of nodes to be infected?

- 2, 3, 4, 5, or 6?

Assume the following network of nodes that are connected in a form of a 5x5 grid:



(Q2) Assume you are playing the firefighter game and the dark nodes are fires whereas the white nodes are nodes you want to protect from the spread of the fire. What is the least number of firefighters that you would need to deploy in order for the fire to not reach the white nodes? (Assume that firefighters do not move after placed on a node, that they protect that node against fire, and that fire spreads with the 1-threshold model)

- 3, 6, 8, 9, or 10?