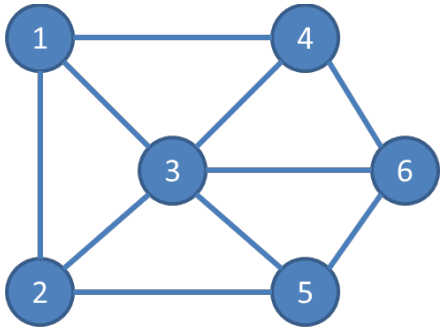
Practice Problems 3 Solutions

Be sure to provide an answer for each question. You may work with other students as well as use your notes, the book, and the internet. Do make sure you understand how to solve the problems and answer the questions, as similar ones may appear on the exams.

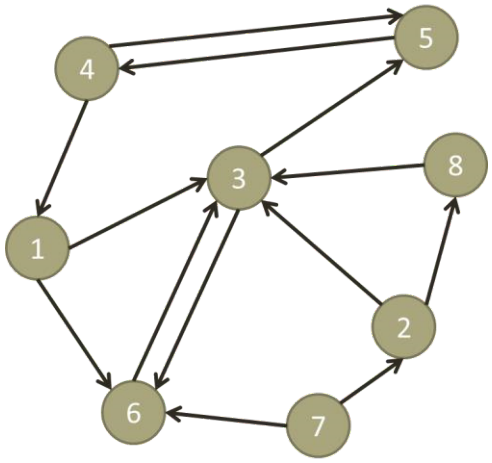
1. Draw an undirected graph using the following set of edges.
   A={{1,4},{4,6},{6,5},{5,2},{2,1},{3,1},{2,3},{3,5},{6,3},{3,4}}



2. What is the degree of each of the nodes in this graph?
   1:3, 2:3, 3:5, 4:3, 5:3, 6:3

3. Is this graph regular?
   No

4. Draw a directed graph using the following binary relation A, using only unidirectional arcs.
   A={(1,3)(1,6),(2,3),(2,8),(3,5),(3,6),(4,1),(4,5),(5,4),(6,3),(7,6),(7,2),(8,3)}



5. What is the in-degree of each of the nodes in this graph?
   1:1, 2:1, 3:4, 4:1, 5:2, 6:3, 7:0, 8:1

6. What is the out-degree of each of the nodes in this graph?
   1:2, 2:2, 3:2, 4:2, 5:1, 6:1, 7:2, 8:1