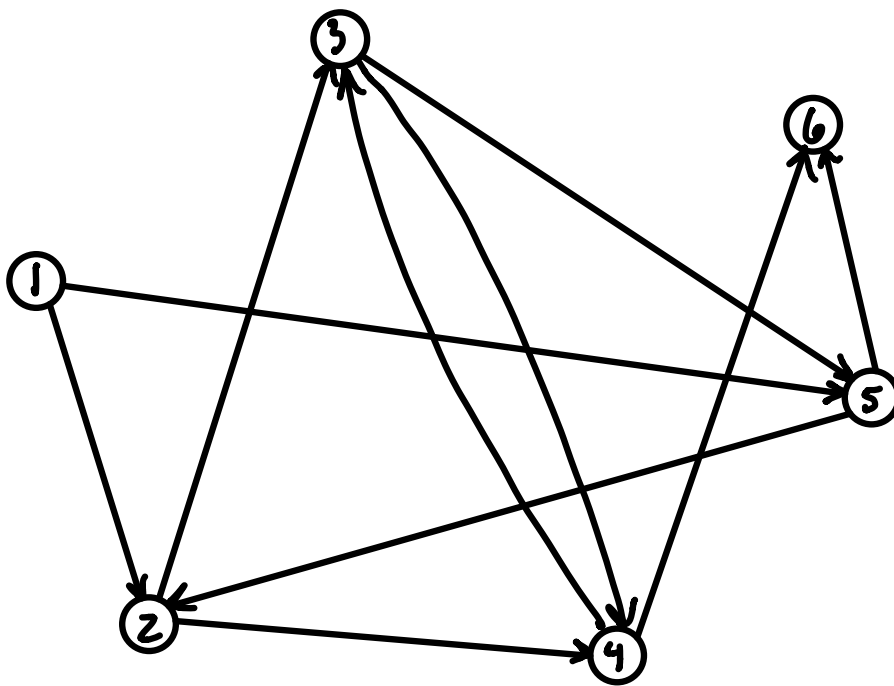


## §8.1: BASIC DEFINITIONS

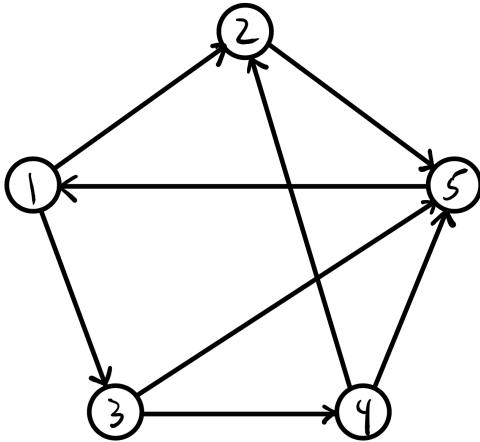
1.] Sketch the graph  $G = (V, E)$  defined by

$$V = \{1, 2, 3, 4, 5, 6\}$$

$$E = \{(1, 2), (1, 5), (2, 3), (2, 4), (3, 4), (3, 5), (4, 3), (4, 6), (5, 2), (5, 6)\}$$



- 2.] For each graph given below, find (a) a chain that's not a path, (b) a path, (c) a cycle, (d) a tree, and (e) a spanning tree.



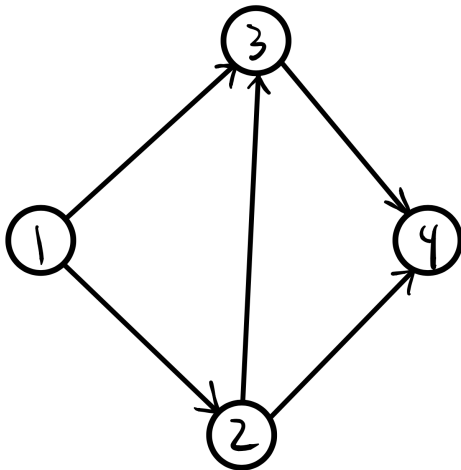
$$a) \{(1,2), (4,2), (4,5)\}$$

$$b) \{(2,5), (5,1), (1,3)\}$$

$$c) \{(1,2), (2,5), (5,1)\}$$

$$d) \{(1,3), (3,5)\}$$

$$e) \{(1,3), (3,4), (3,5), (2,5)\}$$



$$a) \{(1,3), (2,3), (1,2)\}$$

$$b) \{(1,3), (3,4)\}$$

c) There are no cycles.

$$d) \{(1,3), (1,2)\}$$

$$e) \{(1,2), (2,3), (2,4)\}$$