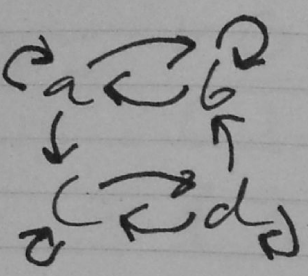
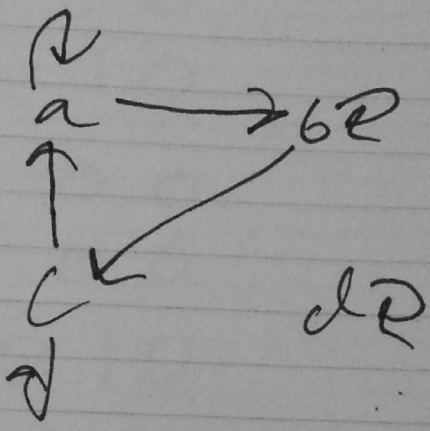
Elt Sobyleh
Discrete Math

3-Mar-15
WS 13

1. 8.4

1) 



b) a) a, b, c, e
path

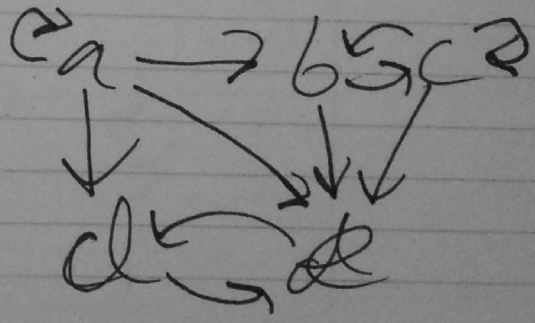
b) b, e, c, b, e
not a path

c) a, a, b, e, d, e
path

d) b, c, e, d, a, a, b
not a path

e) b, c, b, b, e, d, e, d

f) a, a, b, b, c, c, b, e, d
not a path



5) a) $\{(a,c),(b,d),(c,a),(d,b),(e,d)\}$

$$A = \begin{array}{c|ccccc} & a & b & c & d & e \\ a & 0 & 0 & 1 & 0 & 0 \\ b & 0 & 0 & 0 & 1 & 0 \\ c & 1 & 0 & 0 & 0 & 0 \\ d & 0 & 1 & 0 & 0 & 0 \\ e & 0 & 0 & 0 & 1 & 0 \end{array}$$

b) $\{(b,c),(b,e),(c,e),(d,a),(e,b),(e,d)\}$

$$A = \begin{array}{c|ccccc} & a & b & c & d & e \\ a & 0 & 0 & 0 & 0 & 0 \\ b & 0 & 0 & 1 & 0 & 1 \\ c & 0 & 0 & 0 & 0 & 1 \\ d & 1 & 0 & 0 & 0 & 0 \\ e & 0 & 1 & 1 & 0 & 0 \end{array}$$

2. 6.5

1) They are reflexive, symmetric, and transitive