Answer Key

1. a. Vertices: 6

   b. Edges: 6

   c. Write down the degree of each node:

Vertex v	$deg(v)$
a	2
b	2
c	2
d	2
e	3
f	1

   d. Maximum degree: 3

   e. Minimum degree: 1

2. a. $a \to b \to c$ (2) or $a \to d \to c$ (2) or $a \to c$ (1).

   b. Example: $a \to b \to c \to a$

   c. Example: $a \to b \to c \to d$

3. a. Example: KC → Independence → Lee's Summit

   b. Example: KC → Independence → Lee's Summit → Grandview → KC → Overland Park → Olathe → Grandview

   c. Example: KC → Independence → Lee's Summit → Grandview → KC

   d. Example: Olathe → Overland Park → Olathe → Grandview → KC → Grandview → Lee's Summit *to* Independence → KC → Overland Park

   e. Yes: Olathe → Overland Park

4. Many solutions

5. Many solutions