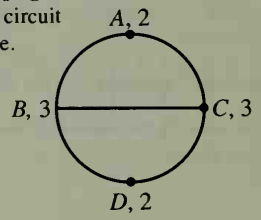
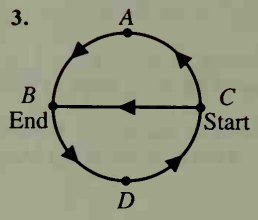
Discrete Mathematics

Exercises, pages 677–678

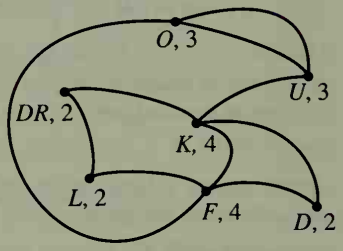
1. No Euler circuit is possible.



3.



5. a. no

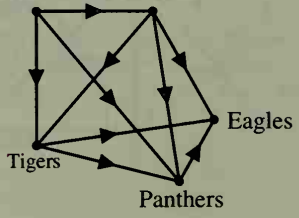


b. yes

c. It is possible to travel a path starting at one odd vertex and ending at another, only if the graph contains exactly two odd vertices.

7. a. Bears, Tigers

b.

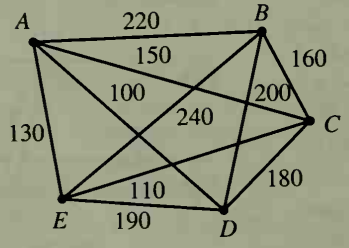


c. Bears should be ranked first since they have three wins, no losses, and a victory over the other team with three wins (Lions). Eagles should be ranked last since they have no wins, three losses, and a loss to the only other team with three losses (Panthers).

Exercises, pages 679–681

1. no **3. a.** yes **b.** 2-by-3, 2-by-8, 4-by-6 **c.** At least one of x or y must be even. **5.** yes **7. a.** $20! = 2{,}432{,}902{,}008{,}176{,}640{,}000$ **b.** 20 **c.** $20 \times 20! = 48{,}658{,}040{,}163{,}532{,}800{,}000$ **d.** about 1543 years

9. a.

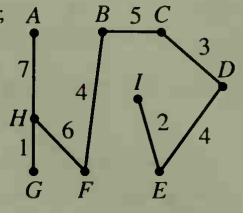


b. $ADCEBA$ = \$850 **c.** $AECBDA$ = \$700

11. The postal service collecting mail from mailboxes, or delivering packages to specific destinations.

Exercises, pages 682–683

1. 32;



3. $n - 1$

5. \$840

7. a. \$99,000 **b.** \$34,000