

**Instructions:** Show all work. Answers without work can only be graded all or nothing. Partial credit is available only when work is shown.

1. For the graph shown, answer the questions that follow.

a. For each vertex on the graph, label the degree of the vertex (next to it).

b. Is the graph connected or disconnected?

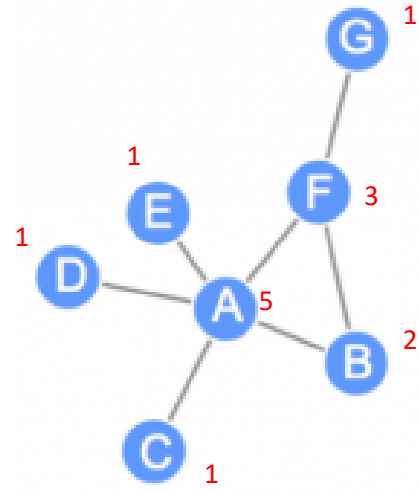
connected

c. Give two examples of a path between vertex G and vertex C. (List the vertices you pass through in order starting with G and ending with C.)

GFAC, GFBAC (other responses are possible)

d. Is the graph a simple graph or a digraph? Explain.

Simple because there are no repeated edges or loops



2. For the graph shown, answer the questions that follow.

a. Is the graph connected or disconnected?

connected

b. Is the graph a simple graph or a digraph? Explain.

Digraph because there are two edges between A and B

c. Label the degree of each vertex.

d. What is the sum of the degrees of all the vertices in the graph?

$$3+5+2+3+3=8+2+6=16$$

e. How many edges does the graph have?

8

f. Do your answers to parts (d) and (e) agree? Explain.

Yes, because  $16/2=8$ .

