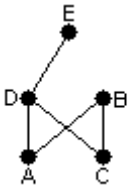
Review Graph Theory

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Which of the following is another way to represent the graph shown.

1) 1) _____



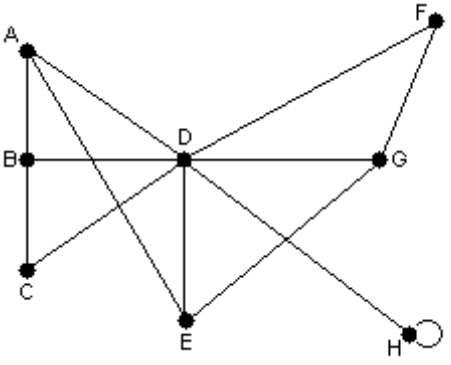
A)

B)

C)

D)

Use the graph below to answer the question.



2) Identify the vertex as odd or even. Vertex C. 2) _____

A) odd B) even

3) What is the degree of vertex G? 3) _____

A) 0 B) 4 C) 2 D) 3

4) Is vertex E adjacent to vertex F? 4) _____

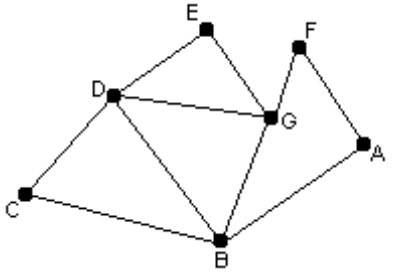
A) no B) yes

5) True or false? DE is a bridge. 5) _____

A) false B) true

Determine whether the given path is an Euler Path, an Euler Circuit, or neither.

6) 6) _____

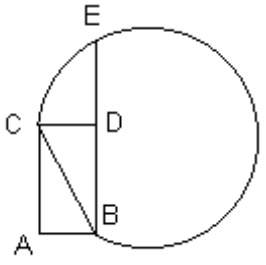


F,A,B,G,D,B,C,D,G,F

A) Euler path B) Euler circuit C) neither

Solve.

7) 7) _____

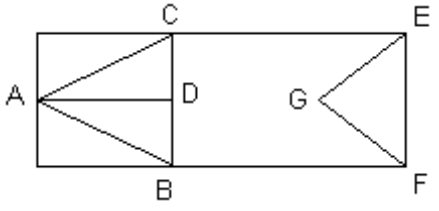


The graph above has a possible path E-B-A-C-B-D-C-E. Trace this path with your pencil and determine whether it is an Euler circuit.

A) yes B) no

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

8) 8) _____

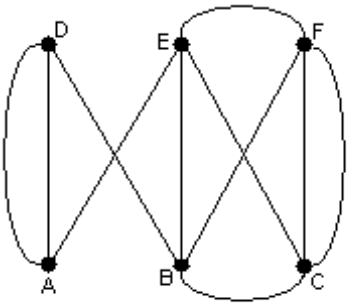


The graph shown above has no Euler paths or Euler circuits. Why?

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use Euler's theorem to determine whether the graph has an Euler path (but not an Euler circuit), Euler circuit, or neither.

9) 9) _____



A) neither B) Euler path C) Euler circuit

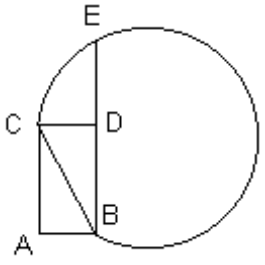
10) The graph has 74 even vertices and no odd vertices. 10) _____
A) Euler path B) Euler circuit C) neither

11) The graph has 83 even vertices and two odd vertices. 11) _____
A) neither B) Euler path C) Euler circuit

12) The graph has 30 even vertices and three odd vertices. 12) _____
A) Euler path B) neither C) Euler circuit

Use Fleury's Algorithm to find an Euler path or Euler circuit if one exists.

13) 13) _____



A) No path or circuit exists.
B) Euler path-E-B-A-C-B-D-C-E-D
C) Euler circuit- E-B-A-C-B-D-C-E

Answer true or false.

14) When using Fleury's algorithm to find an Euler circuit, always begin with an even vertex. 14) _____
A) True B) False