

Chapter 3-Graph Theory

26.Circuits (also known as Cycles)

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circuit: any path that begins and ends at the same vertex

simple circuit: a circuit that does not pass through the same edge twice



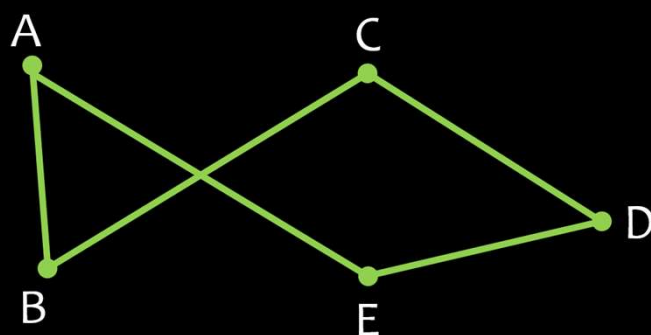
Euler–Edges

Euler circuit: travels over each edge once and only once in a connected graph AND goes back to the starting point

TRICKS:

- look for a graph that all the vertices have even-numbered degrees
- start at any vertex and end there as well

Find a Euler circuit.



There are many options:

ABCDEA
BAEDCB
CBAEDC

DCBAED
EABCDE
AEDCBA...

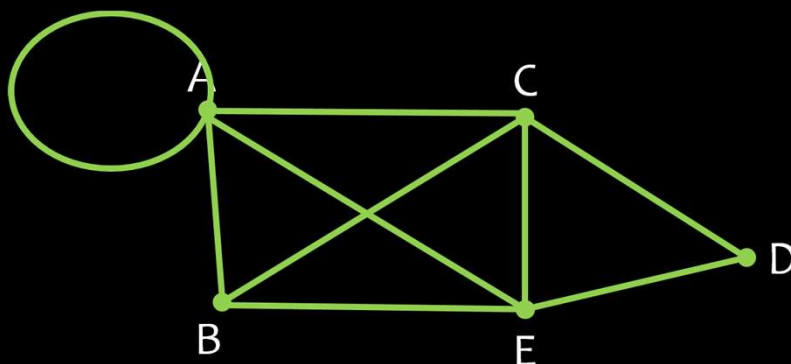
Hamiltonian—Vertices

Hamiltonian circuit: a circuit that passes through every vertex once and only once

TRICKS:

- NONE—use trial and error

Find a Hamiltonian circuit.



There are many options:

ABEDCA
BEDCAB
BACDEB

BCDEAB
DCABED
EABCDE...

Play Glow Puzzle

1. Take out your phones and download “Glow Puzzle”—**FREE** version—only available on Apple devices
2. Play
3. What do you notice about this game?



Classwork/Homework

MHS Worksheets

- Chapter 3—Circuits (also known as Cycles) # 1-10
- Chapter 3—Paths and Circuits—Putting it all Together # 1-10

Online assignments

- Chapter 3—Circuits (also known as Cycles)
- Chapter 3—Paths and Circuits—Putting it all Together # 1-10