**Chains / Paths**

* Chains / Paths are a sequence of edges
* **Simple Chains / Paths** do NOT repeat or double back over a line
* The **length** of a chain is equal to the number of edges in the chain
* The **length** will ALWAYS be 1 less than the number of letters in the chain
* The **distance** is the SHORTEST number of edges that connect 2 vertices
1. Name (Identify) a chain
2. Name a simple path that begins with D
3. Name the length of chain ABCDEBEF
4. Name the distance between F & B

A

B

C

D

E

F

1. ABCDEF - There are A LOT of possible answers…..
2. DCE – There are A LOT of possible answers….
3. Length = 7
4. d(F, B) = 2

A

C

B

D

E

F

G

H

1. Name a path that begins with H
2. Name a simple chain
3. Name the length of path CHGCBA
4. Name d(A,E)

**Cycles / Circuits**

* A cycle / circuit is a chain that **begins** and **ends** at the same vertex
* A **simple cycle / circuit** does **NOT** repeat any edge

**Example #1**

A

B

C

D

Chain ABCDA is a simple cycle because it begins and ends with A and does NOT repeat any edges.

Path ABDCBA is not a simple circuit because edge AB was repeated.

**Example #2**

Try to find as many simple cycles that begin and end with point B.

A

B

C

D

E

F

BAFEB BEFAB BAFEDCB BCDEFAB BCDEB BEDCB