Good Morning

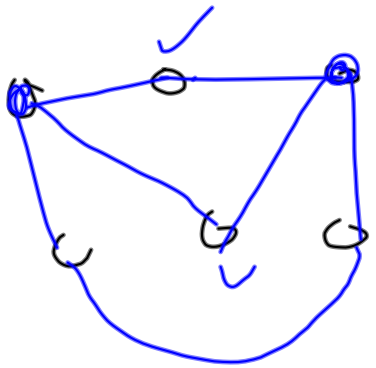
Quiz 1 answers: 20 vertices of deg. 5

Q#1 30 —"— 7

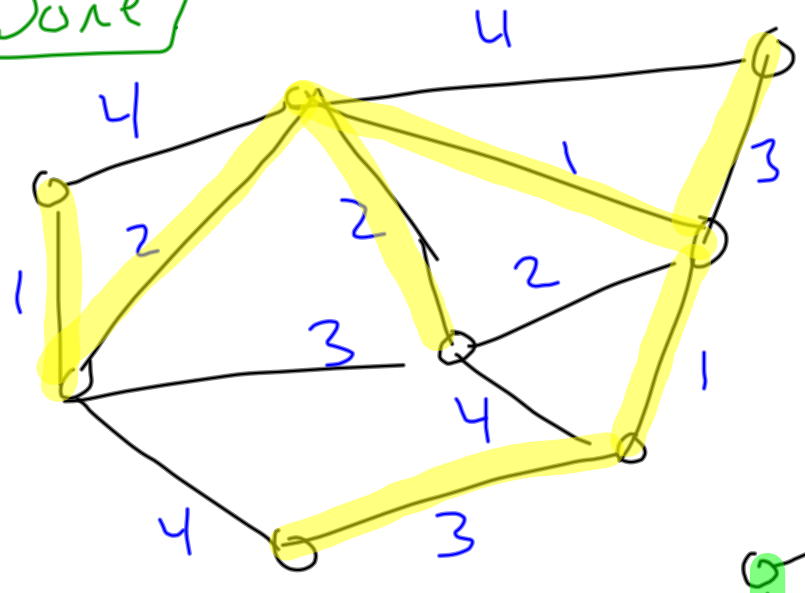
Sum of degrees $= \frac{20 \times 5 + 30 \times 7}{2} =$

Q#2 Any graph with exactly 2 odd vertices

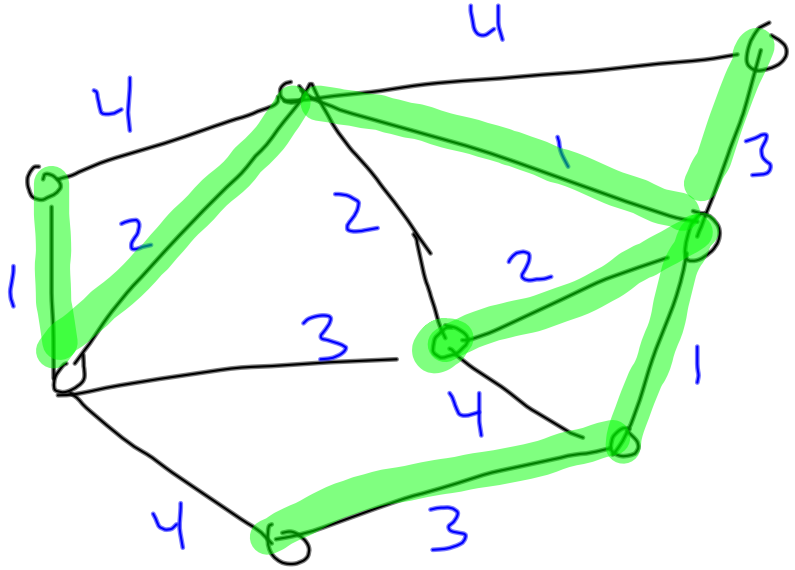
Q#3



Done



Kruskal's



Here ends Chapter 10

Prim's

Chapter 0: Proofs

Logic! ~~Def:~~ A **statement** or **proposition** is any assertion that is unambiguously true or unambiguously false.

Eg: **Props**

$1+1=2$

$1+1=4$

The graph G has exactly one odd vertex

It is raining right now

It rained during 2007

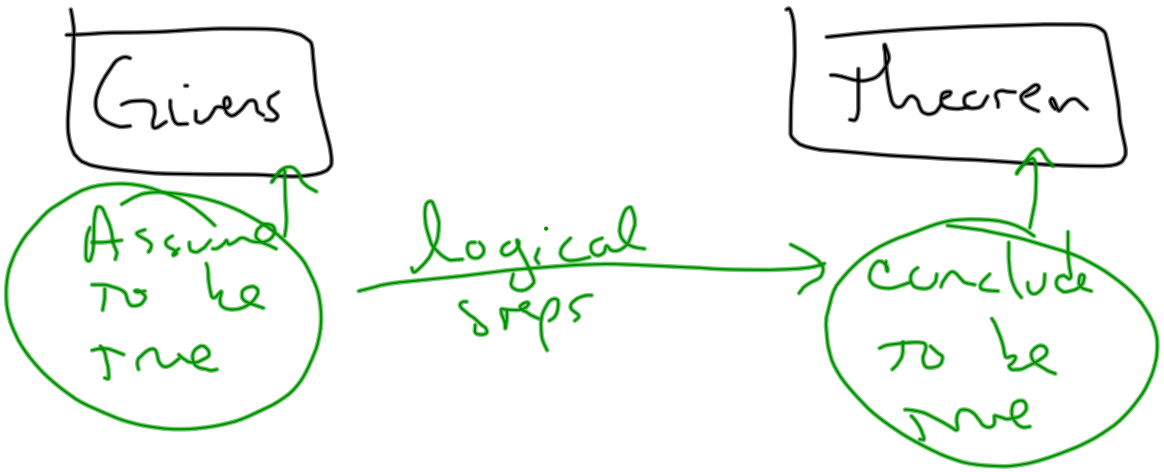
Not Props

$x = y$

The graph G has two odd vertices.

With proofs, we want to establish that certain propositions are true.

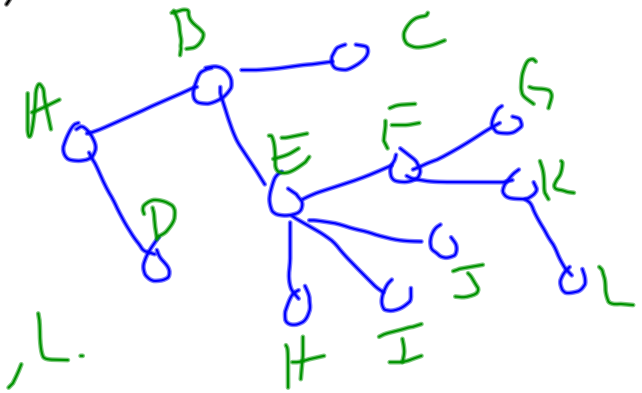
Typically we start a proof by assuming, or taking as given, that certain assertions are true, and logically deducing that what we are trying to prove is true.



Def: A **leaf** is a vertex of degree 1.

Theorem Every tree with ≥ 2 vertices has at least two leaves.

Eg:

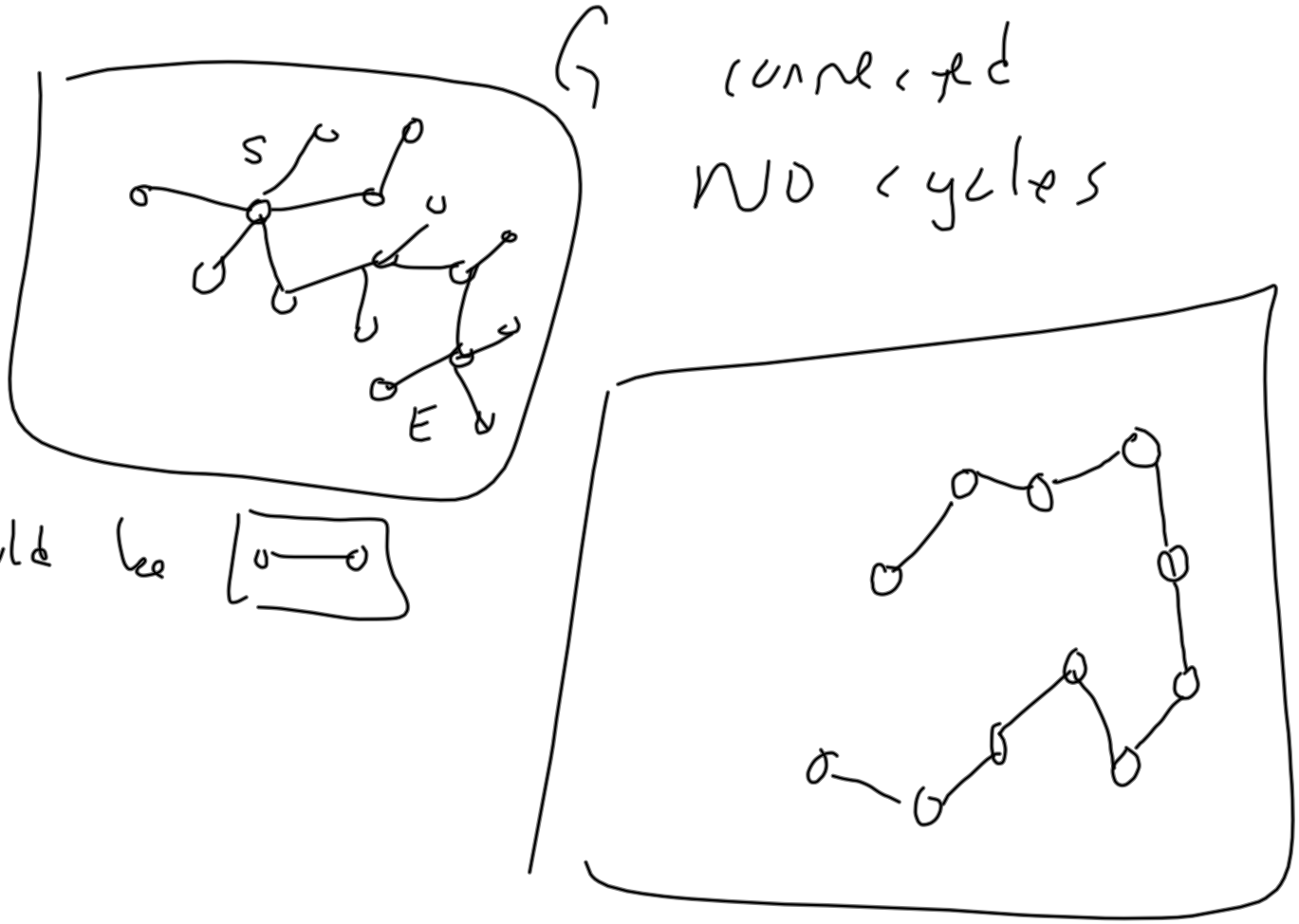


Leaves:
D, C, H, I, J, G, L.

Proof: Let G be a tree. So G is connected and has no cycles.

Select

Commit all definitions to memory, precisely as given. (think flash cards)


G connected
NO cycles
s
E
G could be