DIS 1A

PROOFS

→ **DIRECT PROOF**

to prove $P \Rightarrow Q$, assume P and show Q is true

→ **CONTRAPOSITION**

to prove $P \Rightarrow Q$, assume $\neg Q$ and show $\neg P$ is true.

↳ direct proof of the contrapositive $\neg Q \Rightarrow \neg P$

→ **CONTRADICTION**

to prove P, assume $\neg P$ and expose a contradiction

→ **PROOF BY CASES**

when there exist multiple cases and we can't assume which is true, we must prove for each one

^ examples of each in the notes

→ **INDUCTION** (coming soon!)

PROOF ADVICE

→ if you get stuck, consider trying a different approach instead.

→ unpack definitions and properties given in the problem, and take advantage of theorems we see in class

! be careful to not assume what you're trying to prove

✓ good practice to start by stating your method of proof (outlining your plan.

↳ this makes it easier to read your proof.