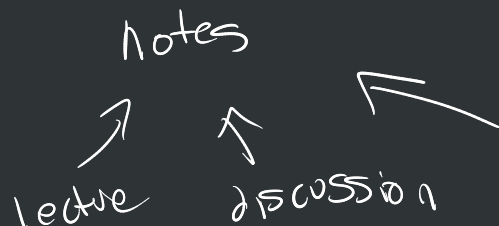



Welcome to CS70!

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Agenda (1A)

- Introduction
- 
- AIs
- How discussion will work
- Collaboration
- Tips and 24
- Questions

To this end, we will be encouraging discussion section attendance with the same TA and fellow students, so that you may feel more comfortable to speak up. At the end of the semester, if you are within 0.5 pts (which is 0.25%) of a grade bin boundary, you may submit a form claiming you participated, and attach evidence of your participation. **Your TA will also be given an opportunity to supplement your participation record.** If your participation record is strong, you will be rounded up to the next grade bin.

Split into 3 Breakfast Rooms, each with one instructor

10-15 mins

Group 1
Tarang

Group 2
Connie

Group 3
Ayush

Discussion 1A

Question 1

a) $\forall x \forall y P \Rightarrow \forall y \forall x P$ True

b) $\exists x \exists y P(x,y) \Rightarrow \exists y \exists x P(x,y)$ True

c) $\forall x \exists y P(x,y) \Rightarrow \exists y \forall x P(x,y)$ False
 $D = y > x$

d) $\exists x \forall y P \Rightarrow \forall y \exists x P(x,y)$ True



(2) XOR

(1)

$$\left[(A \wedge \neg B) \vee (\neg A \wedge B) \wedge \underbrace{(A \vee \neg A)}_T \right]$$

$$F \Rightarrow T \equiv T$$

(2) $[A \oplus B \Rightarrow A \vee B]$
 \checkmark

| A | B | $A \oplus B$ | $A \vee B$ |
|---|---|--------------|------------|
| T | T | F | T |
| T | F | T | T |
| F | T | T | T |
| F | F | F | F |

~~\Rightarrow~~ $\Rightarrow F$

(3)

| $A \vee B$ | $A \oplus B$ |
|----------------|--------------|
| T | F |
| T \checkmark | T |
| T \checkmark | T |
| F \checkmark | F |

④

4

↓ divides

a) $(\forall x \in \mathbb{N})(4|x \Rightarrow 2|x)$ Proof. n is divisible by 4, then

$$n = \underline{4k} = \underline{2(2k)} \text{ therefore } n \text{ is divisible by } 2.$$

$$b) p \Rightarrow q \quad \neg p \Rightarrow \neg q$$

If a natural number is not divisible by 4 its
not divisible 2

False.