

Intro to Discrete Structures

Lecture 5

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Office Hours

- Tuesday 2:45pm – 4:00pm
- Thursday 1:00pm – 2:15pm

Nested Quantifiers

- Two quantifiers are **nested** if one is within the scope of the other, such as

$$\forall x \exists y (x + y = 0).$$

- Everything within the scope of a quantifier can be thought of as a propositional function. Define the propositional functions

- $Q(x) : \exists y P(x, y)$

- $P(x, y) : x + y = 0$

- Then, we have

$$\forall x \exists y (x + y = 0) \equiv \forall x \exists y P(x, y) \equiv \forall x Q(x).$$