# MAT0206 - Lista 1

Matheus T. de Laurentys, 9793714

September 7, 2020

**1.** $A \subseteq B \iff A \cap B = A \iff A \cup B = B$

Proving that: $A \subseteq B \implies A \cap B = A$:

$$(x \in A \cap B \to x \in A) \to A \cap B \subseteq A$$

$$A \subseteq B \to (x \in A \to x \in B) \to A \subseteq A \cap B$$

$$(A \cap B \subseteq A) \wedge (A \subseteq A \cap B) \to A = A \cap B$$

Proving that: $A \cap B = A \implies A \subseteq B$:

$$A \cap B = A \to (x \in A \to x \in A \cap B \to x \in B) \to A \subseteq B$$