$$A = \{x \mid L(x) \wedge U(x)\}$$

V ↖ F ↙ $L(x) = x$ é um livro?

v ~ F ↙ $U(x) = x$ foi comprado com recurso da UTFPR?

$$A = \{V, C\}$$

$$V = \{a, e, i, o, u\}$$

$$C = \{b, c, d, f, g, h, j, \ldots\}$$

$x \in A$ $\qquad$ $y \notin A$

$VL(A(x)) = V$ $\qquad$ $VL(A(y)) = F$

$$A = \{x \mid A(x)\}$$

$U = \{\text{PRÉDIOS}\}$

$C = \{x \mid A(x)\}$

$A(x) = x \text{ é grande?}$

$= x > 5m$

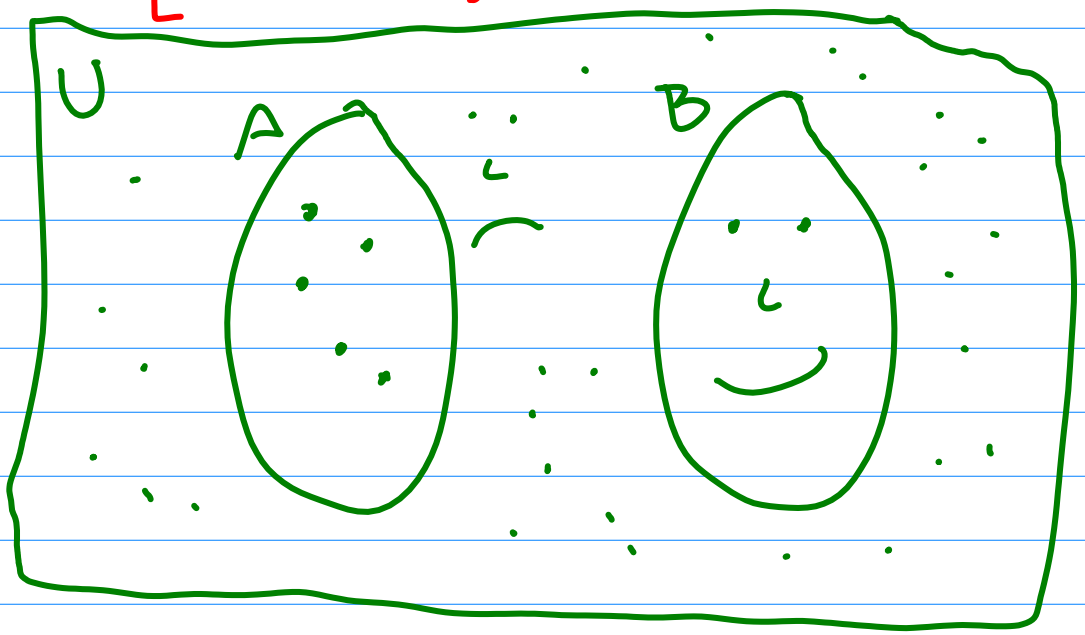
$S = \{x \in \mathbb{N} \mid PAR(x)\}$

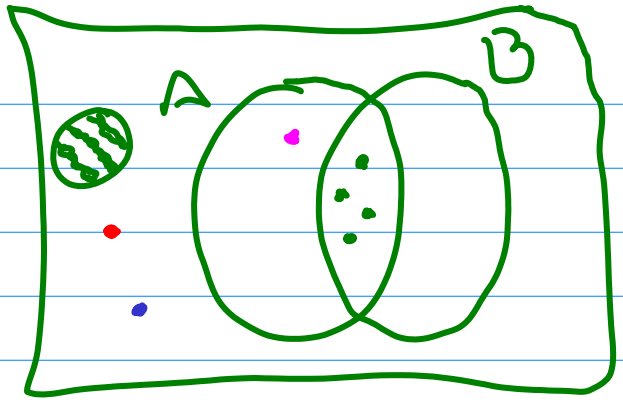
$S = \{x \mid x \in \mathbb{N} \wedge PAR(x)\}$

$S = \{x \mid x \in \mathbb{N} \wedge \frac{x}{2} \in \mathbb{N}\}$

$A = \{4, 5, 6\}$

$S = \{-2, 2\}$





P	Q	P → Q
V	V	V
V	F	F ←
F	V	V
F	F	V

$A = B$ ise $(\forall x (x \in A \to x \in B) \wedge (x \in B \to x \in A))$

$A \neq B$

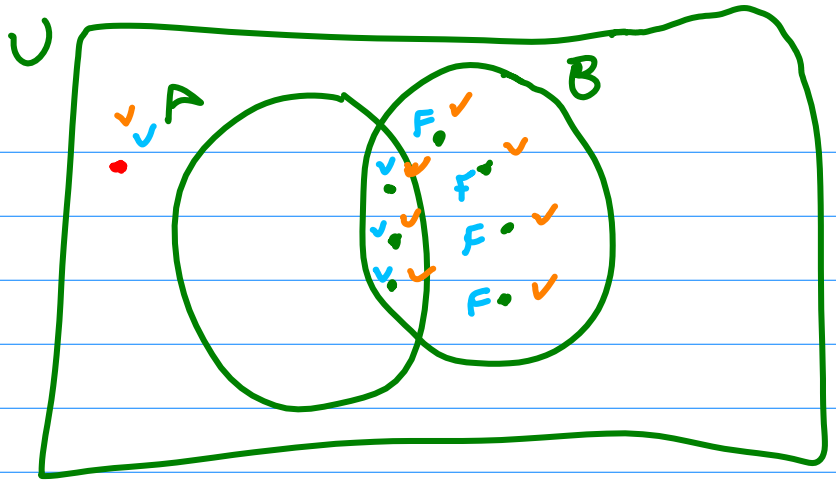
(F)

$A = B$ ise $(\forall x (x \in A \to x \in B) \wedge (x \in B \to x \in A))$

$A \neq B$ ise $(\exists x \neg [(x \in A \to x \in B) \wedge (x \in B \to x \in A)]$

ise $(\exists x (x \in A \wedge x \notin B) \vee (x \notin A \wedge x \in B))$

$A = B$ ise $A \subset B \wedge B \subset A$



$A \subset B$? ✓ → $A \subset B$ με $\forall x (x \in A \to x \in B)$

$B \subset A$? → $B \subset A$ με $\forall x (x \in B \to x \in A)$

$B \not\subset A$?

↳ $\exists x (x \in B \wedge x \notin A)$

$A \subsetneq B$ με $A \subset B \wedge A \neq B$

$A = B$ με $A \subset B \wedge B \subset A$

$A \subsetneq B$ με $\forall x (x \in A \to x \in B) \wedge$
$\exists x (x \in B \wedge x \notin A)$

ACA

A ⊂ B se $\forall x (x \in A \rightarrow x \in B)$

A ⊂ A se $\forall x (x \in A \rightarrow x \in A)$

L PREDICATIVA

L PROPOSICIONAL

1. $\forall x (Ax \rightarrow Ax)$
2. $Ai \rightarrow Ai$ — IU 1
3. $\neg Ai \vee Ai$ — EQ 2

✓

$(A = B) \wedge (B = C) \Rightarrow A = C$ $\quad \forall x [(x \in A \rightarrow x \in C) \wedge (x \in C \rightarrow x \in A)]$

$\forall x [(x \in A \rightarrow x \in B) \wedge (x \in B \rightarrow x \in A)] \wedge$

$\forall x [(x \in B \rightarrow x \in C) \wedge (x \in C \rightarrow x \in B)]$

1. $\forall x [(Ax \rightarrow Bx) \wedge (Bx \rightarrow Ax)]$
2. $\forall x [(Bx \rightarrow Cx) \wedge (Cx \rightarrow Bx)]$

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3. $(Ai \rightarrow Bi) \wedge (Bi \rightarrow Ai)$ — IU 1
4. $(Bi \rightarrow Ci) \wedge (Ci \rightarrow Bi)$ — IU 2
5. $Ai \rightarrow Bi$ — SIMP 3
6. $Bi \rightarrow Ai$ — SIMP 3
7. $Bi \rightarrow Ci$ — SIMP 4
8. $Ci \rightarrow Bi$ — SIMP 4
9. $Ai \rightarrow Ci$ — SM 5, 7
10. $Ci \rightarrow Ai$ — SM 6, 8
11. $(Ai \rightarrow Ci) \wedge (Ci \rightarrow Ai)$ — UNO 9, 10

11. $(A_i \rightarrow C_i) \wedge (C_i \rightarrow A_i)$

12. $\forall x \{(Ax \rightarrow Cx) \wedge (Cx \rightarrow Ax)\}$ G.U. 11

13. $\forall x\, (x \in A \rightarrow x \in C) \wedge (x \in C \rightarrow x \in A)$

$\overset{\text{ME}}{A = C}$