

$$A \quad \forall x \, \underline{P_x} \rightarrow \underline{Q_x}$$

$$O \quad \underline{\exists x \, \underline{Q_x} \wedge \underline{\neg R_x}}$$

$$O \quad \exists x \, \underline{P_x} \wedge \underline{\neg R_x}$$

$$A \quad \forall x \, \underline{A_x} \rightarrow \underline{V_x}$$

$$I \quad \underline{\exists x \, \underline{A_x} \wedge \underline{P_x}}$$

$$A \quad \forall x \, \underline{P_x} \rightarrow \underline{V_x}$$

$$A \quad \forall x \, \underline{G_x} \rightarrow \underline{H_x}$$

$$A \quad \underline{\forall x \, \underline{A_x} \rightarrow \underline{G_x}}$$

$$A \quad \forall x \, \underline{A_x} \rightarrow \underline{H_x}$$

$$I \quad \exists x \quad \underline{P_x} \wedge \underline{H_x}$$

$$E \quad \forall x \quad \underline{E_x} \rightarrow \neg \underline{P_x}$$


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$$E \quad \forall x \quad \underline{E_x} \rightarrow \neg \underline{M_x}$$

$$\forall x \quad H_x \rightarrow M_x$$

$$H('Socrates')$$


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$$M('Socrates')$$

$$A \quad \forall x \quad \underline{M_x} \rightarrow \underline{M_x}$$

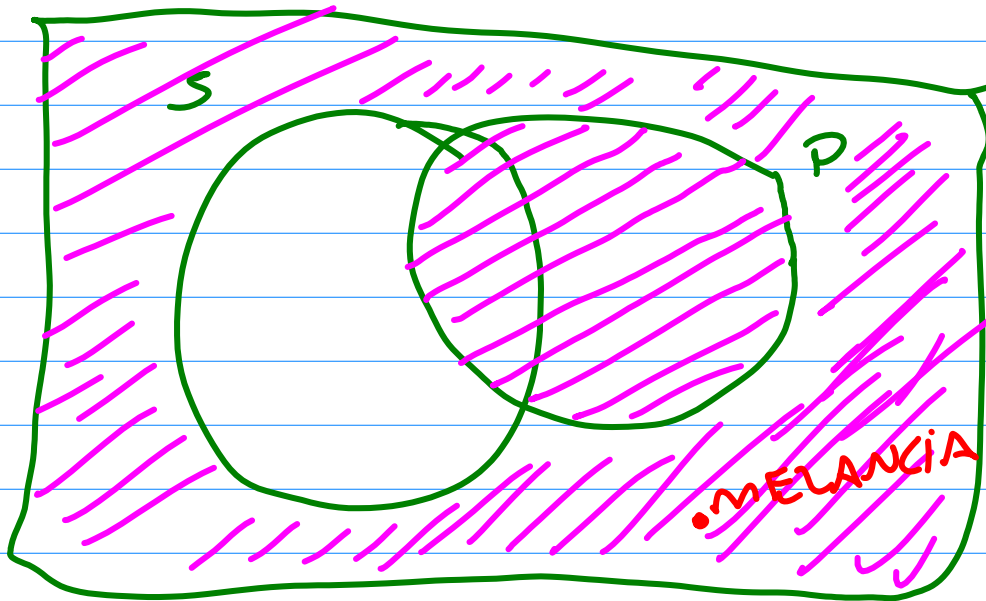
$$A \quad \forall x \quad \underline{S_x} \rightarrow \underline{H_x}$$


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$$A \quad \forall x \quad \underline{S_x} \rightarrow \underline{M_x}$$

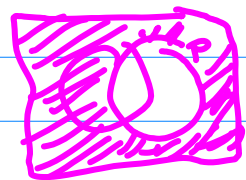
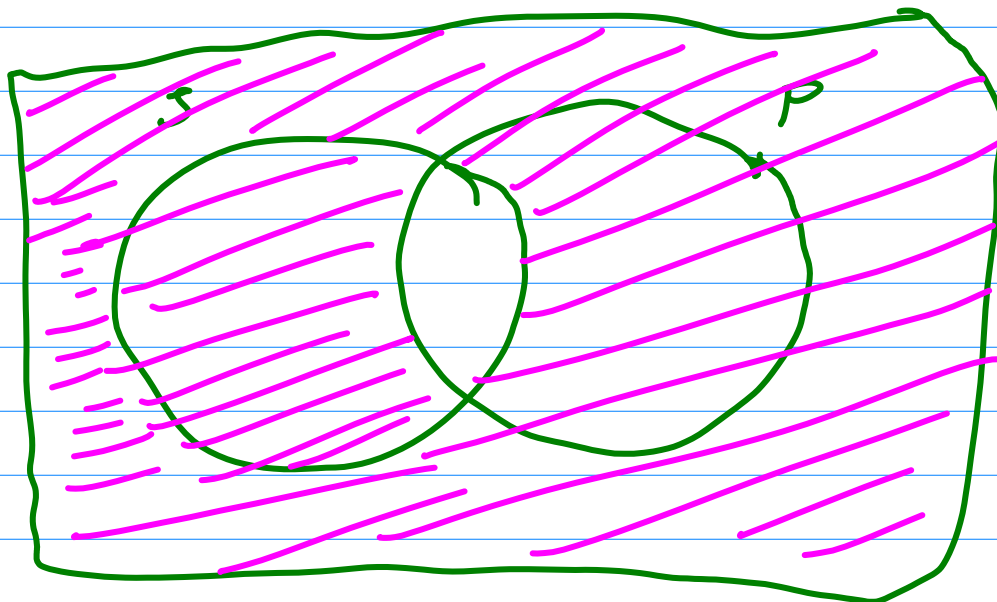
$$\forall x \quad Sx \rightarrow Px$$

$$\forall x \quad \neg Sx \vee Px$$

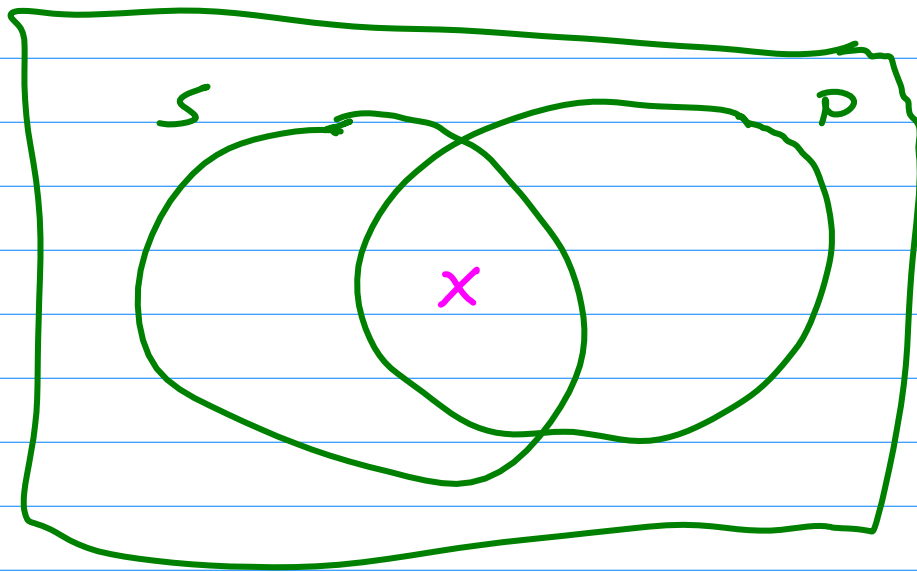


$$\forall x \quad Sx \rightarrow \neg Px$$

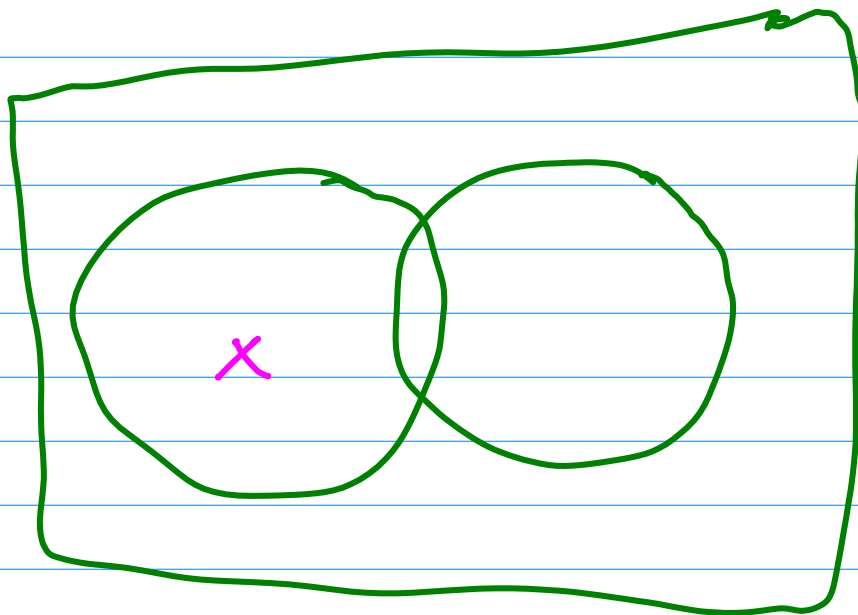
$$\forall x \quad \neg Sx \vee \neg Px$$



$$\exists x Sx \wedge Px$$



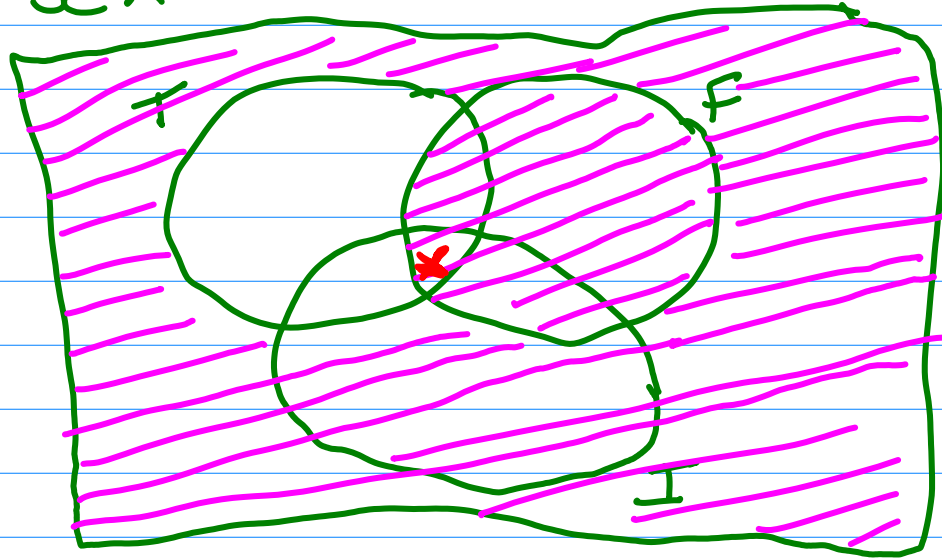
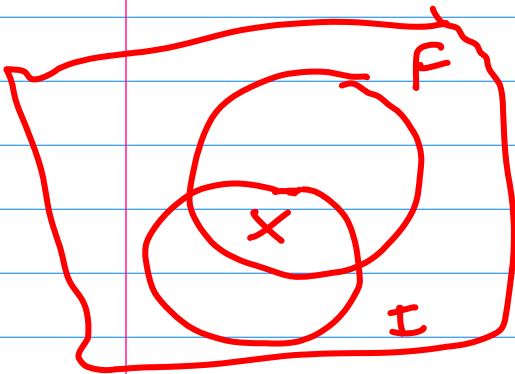
$$\exists x Sx \wedge \neg Px$$



$$\forall x T_x \rightarrow F_x \quad \bullet$$

$$\exists x T_x \wedge I_x \quad \bullet$$

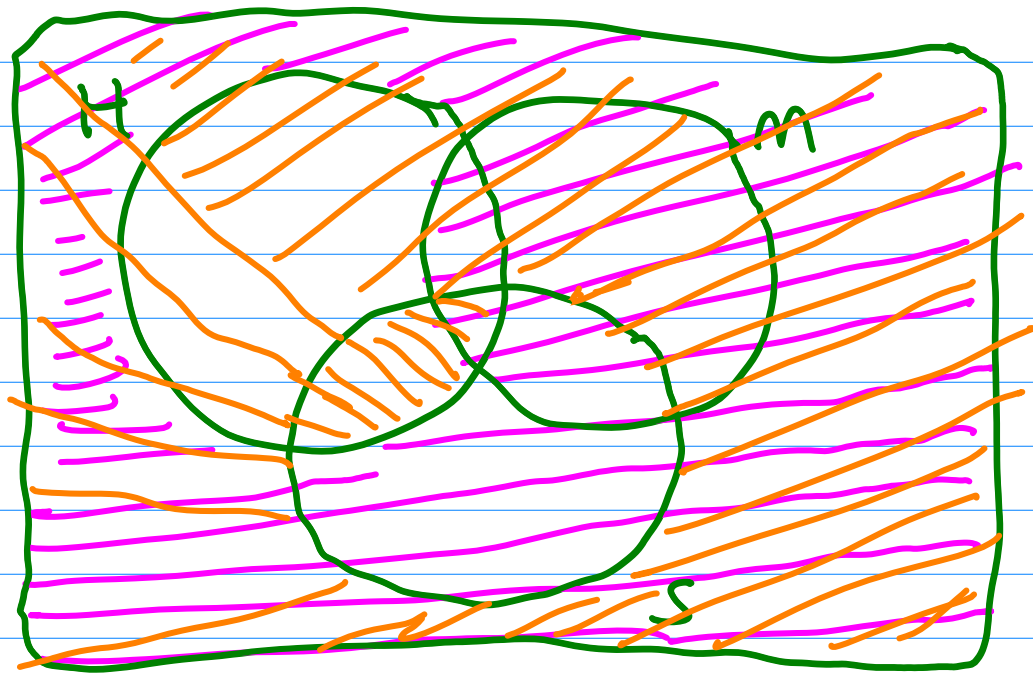
$$\Rightarrow \exists x F_x \wedge I_x$$



$$\forall x H_x \rightarrow M_x \quad \bullet$$

$$\forall x S_x \rightarrow H_x \quad \bullet$$

$$\forall x S_x \rightarrow M_x$$

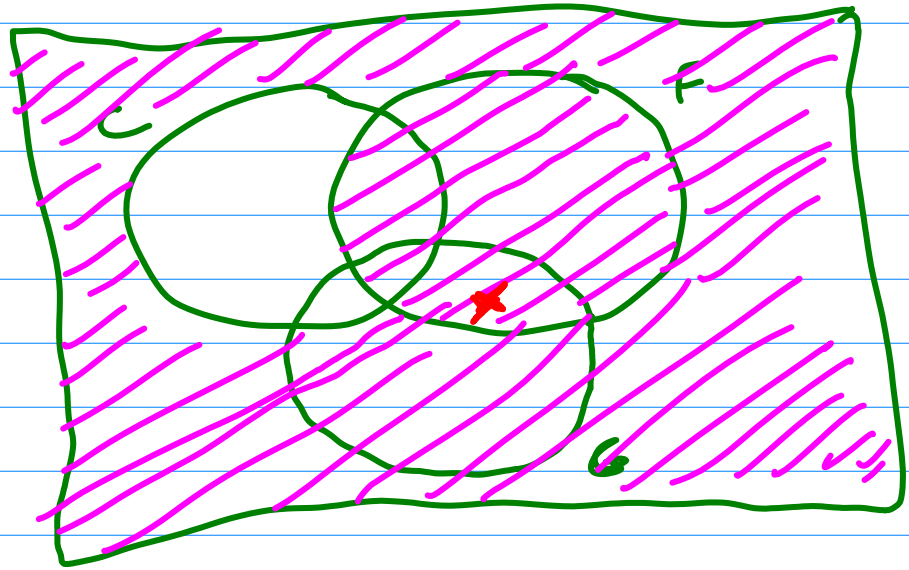


$$\forall x \ Cx \rightarrow Fx \quad \bullet$$

$$\exists x \ Gx \wedge Fx \quad \bullet$$

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$$\exists x \ Gx \wedge Cx$$



$$4) a) \forall x \text{Par}(x) \rightarrow \neg \text{Primo}(x) \quad \text{F}$$

$$b) \forall x \text{Primo}(x) \rightarrow \text{Ímpar}(x) \vee x = 2 \quad \checkmark$$

$$c) \exists x \text{Primo}(x) \wedge \text{Par}(x) \quad \checkmark$$

$$d) \exists x \text{Primo}(x) \wedge \neg \text{Par}(x) \quad \checkmark$$

$$5) a) \forall y (\text{Pessoa}(y) \rightarrow \neg \text{Tinha}(y, \text{DiscoA}, 19:00))$$

Ninguém tinha o discoA às 19:00.

$$b) \forall x (\neg \text{Nervoso}(x, 19) \vee \neg \text{Estudante}(x) \vee \neg \text{Apagou}(x, \text{DiscoA}, 19))$$

$$\forall x (\text{Estudante}(x) \wedge \text{Nervoso}(x, 19) \rightarrow \neg \text{Apagou}(x, \text{DiscoA}, 19))$$

Os estudantes que estavam nervosos às 19:00 não tinham apagado o discoA.

(A pessoa)

Quem recebeu o discoA de Max às  
14:00 estava nervoso às 14:05.

Clare nunca deu o discoA para Max.