a) F is inconsistent $\leftrightarrow$ F is unsatisfiable

~~For any φ $\varphi \leftrightarrow F \equiv \bot$~~

$\models \neg F$

$\models \neg(F_\varphi \wedge \varphi)$

$\therefore$ If an assignment satisfies F_φ it cannot satisfy φ else $\neg F$ we have a satisfying assignment for F.

$\therefore$ $F_\varphi \models \neg\varphi$

$F_\varphi \vdash \neg\varphi$ completeness