Intro logic 2025: quiz

The only resources allowed are your brain and a writing instrument. Please write your answers neatly in the exam booklet.

A. Proofs

Please prove **one of the two** sequents below. You may use any of the primitive rules (including UE,UI,EE,EI), or "prop taut" for any substitution instance of a valid sequent of the propositional calculus. There is a list of some useful valid sequents on the back side of this page.

1. $\vdash \exists x \forall y (Fx \to Fy)$
2. $\forall x (\exists y Rxy \to \forall z Rzx), \exists x \exists y Rxy \vdash \forall x \forall y Rxy$

B. Translation

Please translate **both** of the sentences below into predicate logic. For the first sentence, don't use any predicates or relation symbols besides the equals symbol.

1. There are exactly two things.
2. There is a critic who admires no painters. (Cx, Py, Axy)