Math 161—Writing Assignment 06

*Due: Sunday October 14—5:00*PM

Getting Started

1. Get the template for this assignment. Here's how to do it:
   - Go to https://v2.overleaf.com/ (formerly: https://www.sharelatex.com), and **make sure you are logged in**.
   - In a new window, go here:

     https://v2.overleaf.com/read/yfpqtyhdvnwd
   - Click on the menu icon in the upper-left and select "Copy Project"
   - When ask for a name, choose something like "Math 161 - WA 06" and click "Copy"
   - When this completes you will be back in your own workspace (instead of mine).
   - After solving the problem(s), type them up using the template.
   - Email me your final draft.
2. Let me know if you have any questions!

1. Let $\mathcal{L}$ be any language. Let t be any $\mathcal{L}$-term and ϕ any $\mathcal{L}$-formula for which t is substitutable for x in ϕ. Prove that there exists a deduction of $\phi_t^x \to (\exists x \phi)$ that does not use any logical axiom of type (Q2).

   Note: this is Problem 2.4.3 #4. Please prove this carefully.

You will see in the template that I got you started, but please feel free to write it up differently.