MAU11602 Assignment 5, Due Wednesday 13 March 2024

1. Construct a tableau showing that $(\{\exists x.[\forall y.(fxy)]\} \supset \{\forall y.[\exists x.(fxy)]\})$ is valid.

2. Translate the following informal statements about the natural numbers into the formal language from the notes.

   (a) Every number can be written as the sum of four squares.

   (b) $\sqrt{2}$ is irrational.

   (c) There are infinitely many composite numbers.