Assignment #1

Name: _____ ID: _____

This assignment has **2** questions, for a total of **25** marks.

Question 1: **Proof Cases** . . . . 10 marks
  Complete the missing proof cases for the proof of forward simulation (recall that we did only: true,
  let $x = e$ in e'). Spell out the inductive hypotheses in the inductive cases.

Question 2: **Exceptions** .... 15 marks

Encode expressions for throwing and catching exceptions both in the source and in the target language and define their semantics. If this is simpler for you, you can change the whole semantics to be big-step or to SOS (this is not necessary, but it may help some people). Exceptions in the source must be typed so provide the typing rules for exception-related expressions. Change the compiler so that exceptions are thrown securely in compiled programs and argue why is that compiler fully abstract.

Note: you may have to change things around in order to do this, it's up to you to find out what; as always strive for an elegant solution.

Note: typeset these things in LaTeX and use colours, you can find the macros in my homepage.