

CS 577 Homework 1 – due 10am, Thursday, Apr. 8, 2004

Homework must be submitted on paper in class. All programs mentioned can be downloaded via the course web page.

1. Do Pierce 3.5.10.
2. Do Pierce 3.5.13.
3. Do Pierce 3.5.14. Use structural induction on t .
4. Do Pierce 3.5.17. Just do one direction (“if” or “only if”) – take your pick!
5. Write and test an OCAML function

```
size : term -> int
```

that implements definition 3.3.2. It will be easiest to put this in file `syntax.ml` and change `main.ml` to print out the size of each input term. Submit just the code for the `size` function.

6. Do Pierce 4.2.2. Just change the implementation of the `eval` function in `core.ml`. If no big-step rule applies, raise the `NoRuleApplies` exception; unlike in the small-step case, this should *not* be caught, but should instead propagate to the top level. Submit your changed `core.ml` file.