

Homework 3 (25pts)

Due on paper before class Feb 27, 2012

Reduce each of the following lambda terms to normal form.

1. $\lambda x. (\lambda y. y x) 20$
2. $(\lambda x. \lambda y. y x) y$
3. $(\lambda x. \lambda y. y x) y (\lambda x. x + 1)$
4. $(\lambda x. \lambda y. x (x y)) (\lambda x. x + y) 5$
5. $(\lambda f. \lambda g. g (f x)) (\lambda x. \lambda y. x * (y+2)) (\lambda y. y - 1) 5$