CS 440 — Lambda Calculus Reductions

Why

You have just seen lambda calculus in lecture. It will show up again many times in this course, so understanding it is essential to understanding other material that comes later. These problems will help make sure have a good grasp on the mechanics of it.

Learning Objectives

1. Understand how a lambda calculus reduction is performed.
2. Discover what an infinite loop looks like in lambda calculus.

Questions

1. $(\lambda x.x)\ y$

2. $(\lambda x.x\ z)\ (\lambda y.y)$

3. $(\lambda x.x\ (\lambda x.y))\ (\lambda z.z)$

4. $(\lambda x.x\ x)\ (\lambda x.x\ x)$