MATH 347: FUNDAMENTAL MATHEMATICS, FALL 2015

HOMEWORK 2

Due on Wednesday, Sep 9

Exercises from the textbook. 2.1, 2.2, 2.8, 2.10, 2.15, 2.21, 2.24, 2.38

Out-of-the-textbook exercises (these are as mandatory as the ones from the textbook)**.**

1. The Goldbach conjecture says that every even natural number greater than two is equal to the sum of two primes. It hasn't yet been proven or refuted and it is one of the oldest open problems in number theory! Choose appropriate domain X, target set Y and a function $f : X \to Y$ so that the Goldbach conjecture is equivalent to $f(X) = Y$.

2. Let $r \in \mathbb{R}$ and prove the following: if for every (real) $\varepsilon > 0$, $|r| < \varepsilon$, then $r = 0$.

Exercises for fun, not for credit (don't have to turn in)**.**

From the textbook: 2.40