## Math 2534 Homework 5: Proof by Contradiction Spring 2018

Show all work and staple multiple sheets.

## Problem 1: Indirect Proof by contradiction -definitions only

**Theorem:** For all non-zero rational numbers, the product of a rational number and an irrational number is always irrational.

## Problem 2: Indirect Proof by contradiction -definitions only

Theorem: If m and n are integers and the product (m)(n) is even then m is even or n is even.

## Problem 3: Indirect Proof by contradiction -definitions only

Theorem: For all integers n, 6n + 1 is not divisible by 6.