**Sections 2.1 and 2.2**

**Part One -** Define the following vocabulary types of numbers.

* Even and Odd
* Rational Numbers
* Divides
* Prime and composite
* Inequalities

**Part Two -** Define the following vocabulary terms.

* theorem
* proof
* axioms
* proof by exhaustion
* proof of existence
* counter example

**Part Three**

For each of the following theorems either prove by direct proof (proof of existence) or disprove by counterexample

1. There is a perfect square that can be written as the sum of two other perfect squares.
2. There is an integer n such that 2n2 – 5n + 2 is prime.
3. For all real numbers a and b, if a<b then a2 < b2
4. For all integers n, if n is odd then (n-1)/2 is odd.
5. For all integers m and n, if 2m + n is odd then m and n are both odd.