Name_____

Math 226 Quiz 2

1. (3p) Use a direct proof to show that the sum of two even integers is even.

2. (2p) Suppose P(n) is "If n is a positive integer then $n^2 \geq n$". Prove P(1). What kind of proof did you use?

3. (3p) Prove that $n^2 = m^2$ if and only if $m = n$ or $m = -n$.

4. (3p) Show that if n is an integer and $n^3 + 5$ is odd, then n is even. Use proof by contraposition.

5. (1p) Evaluate $13 \bmod 3$ by hand. Show all your work.

6. (1p) Evaluate $-97 \bmod 11$ by hand. Show all your work.

7. (3p) Determine which of the numbers 21, 43, 55 are pairwise relatively prime?