Analysis 1
Quiz 3

Name:_____

You have 10 minutes to complete this quiz. If you have a question raise your hand and remain seated. In order to receive full credit your answer must be **complete**, **legible** and **correct**. Show your work, and give adequate explanations.

1. $3x^3 - 7x + 10$ is an example of an integer polynomial in the variable x. Write down a finite alphabet of symbols, A, for which it is possible to express any integer polynomial in the variable x using some finite string of symbols from A.

$A = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, +, -, *, x\}$.

So, for example, $3x^3 - 7x + 10$ could be expressed as $3 * x * x * x - 7 * x + 10$. (Other alphabets are possible. You might want your alphabet to include punctuation symbols like (and), or an exponentiation symbol like $\hat{}$. Then you could write $3x^3 - 7x + 10$ as $(3 * x\hat{}3) - (7 * x) + 10$.)

2. What does your answer to Problem 1 tell you about the cardinality of the set of integer polynomials in the variable x?

The set of integer polynomials in the variable x is countable.