CSci 1302 Independent Work
Due Monday, April 16th in class

Problem 1. Prove the following, using definitions on p. 519:

1. $6x^2 + 2$ is $O(3x^2 + 1)$

2. $x^2 - 1$ is $\Omega(x + 1)$

3. $3x + 5$ is $\Theta(x)$.

Problem 2. Read the beginning of section 9.3 on pages 531, 532, 533.

1. In your own words explain what the best case of an algorithm is and what the worst case of an algorithm is.

2. When are the worst and the best case the same? Try to come up with an example, but if you can't then just describe a situation when this happens.

3. The notion of of efficiency is new to you, so you should have questions about it. Write down one question that you have about algorithm efficiency, the way it is described in the book.