Math 41 Definitions and Tests

You must know the following definitions and tests for the quiz this Friday, and also the midterm next week.

<u>Vertical Line Test</u>

A graph represents a function if and only if no vertical line meets the graph more than once.

<u>Definition of "Zeros of a Function"</u>

The zeros of a function f are the values of x for which $f(x) = 0$.

<u>Definition of "Increasing Function"</u>

A function f is increasing on an interval if and only if
for all x_1 and x_2 in the interval, if $x_1 < x_2$, then $f(x_1) < f(x_2)$.

<u>Definition of "Decreasing Function"</u>

A function f is decreasing on an interval if and only if
for all x_1 and x_2 in the interval, if $x_1 < x_2$, then $f(x_1) > f(x_2)$.

<u>Definition of "Relative/Local Maximum"</u>

A function f has a relative/local maximum at $x = a$ if and only if
$f(x) \le f(a)$ for all x in an interval around a.

<u>Definition of "Relative/Local Minimum"</u>

A function f has a relative/local minimum at $x = a$ if and only if
$f(x) \ge f(a)$ for all x in an interval around a.