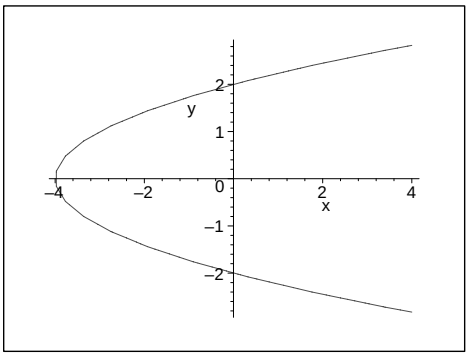
Math 151
Quiz 2

Justify all answers with neat and organized work. Clearly indicate your answers. 20 points possible.

1. (4 pts.) Take home Maple Lab 2 (Rewriting Polynomials in Powers of $(x - p)$) and Maple Lab 3 (Tangents to Polynomials at an Arbitrary Point p).

2. (1 pt.) Determine whether the curve is a graph of a function of x.



3. (3 pts.) Express the function in the form $f \circ g$. (In other words, write down $f(x)$ and $g(x)$ so that $f \circ g = F$.)

$$F(x) = (x - 5)^9$$

4. (4 pts.) Evaluate the limit symbolically (algebraically), showing all significant algebraic steps.

$$\lim_{x \to 3} \frac{x^2 + x - 12}{x^2 - 5x + 6}$$

5. (4 pts.) Evaluate the limit symbolically (algebraically), showing all significant algebraic steps.

$$\lim_{h \to 0} \frac{(7+h)^{-1} - 7^{-1}}{h}$$

6. (1 pt.) Draw, in standard position, the angle whose measure is given.

$$-\frac{3\pi}{4} \text{ rad}$$

7. (3 pts.) Recall that for polynomial functions $f(x) = a + bx + cx^2 + dx^3$ of degree 3 or less, the formula for the slope of the tangent to the graph at the point where $x = p$ is given by

$$m = b + 2cp + 3dp^2.$$

For the following polynomial, find the equation of the tangent to the graph at the point where $x = p = -1$.

$$y = x^2(2x + 5) + 7$$