Name.....

UID.....

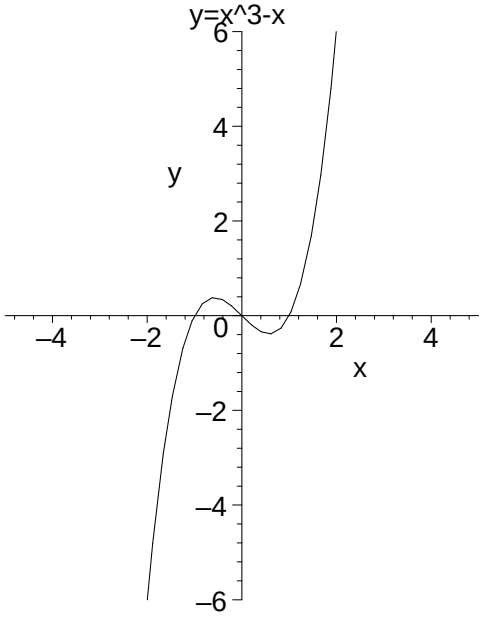
**Math 1210-2**

**Quiz 3**

September 7, 2007

Show all work for complete credit!

1) Here is the graph of the function $f(x) = x^3 - x$:




1a) Precisely how is the graph of $g(x) = (x+2)^3 - x - 5$ obtained by translating the graph of f(x) pictured above? Describe the translation(s) precisely, and then add the sketch the graph y = g(x) into the picture above.

(3 points)

1b) Precisely how is the graph of $h(x) = \left[\frac{x}{2}\right]^3 - \frac{x}{2}$ obtained from the graph of f(x)? Describe the scaling precisely, and add the graph of h(x) to the picture above.

(3 points)

2) $p(x)=\sqrt{x}$ and $f(x)=x^3-x$.

2a) What is the formula for the product function (fp)(x)?

(1 point)

2b) What is the formula for the composition (f o p)(x)= f(p(x))?

(1 point)

2c) What is the domain of (f o p) ?

(1 point)

2d)* What is the domain of (p o f) ? Hint: first write the formula for (p o f), then look at the graph of f in problem 1 for inspiration.

(1 point)