Homework 2

January 14, 2009

Let

$$g(x) = \int_x^{x^2} 3t - 12 \, dt$$

(**a**) Evaluate $g(0)$ and $g(1)$.

(**b**) Draw the graph of $3t - 12$ and explain what $g(2)$ represents in that graph.

(**c**) Compute $g(2)$.

(**d**) Using the Fundamental Theorem of Calculus Part 1 find $g^{'}(x)$.

(**e**) Using the Fundamental Theorem of Calculus Part 2, write $g(x)$ as a polynomial.

(**f**) Differentiate the expression you got in part (**e**) to find $g^{'}(x)$.

(**g**) Is the answer of (**d**) equal the answer of (**f**)? Why or why not?