

Math 111 Quiz #8
May 24, 2011

Name: _____

Show all work and answers on a separate sheet. Simplify your answers as much as possible.

- (2 pts.) For the function $f(x) = 3x^2 + 1$, simplify the quantity $\frac{f(x+h)-f(x)}{h}$.
- (2 pts.) Decompose the function $F(x) = 8 + \sqrt{x^5 + 2}$ into two functions $u(x)$ and $v(x)$ such that $u(v(x)) = F(x)$. (with $u(x) \neq x$ and $v(x) \neq x$)
- Use the functions $f(x) = x - 4$ and $g(x) = x^2 + x - 12$ for parts (a) and (b) below.
 - (1 pt.) For the function $h(x) = f(x) \cdot g(x)$, find $h(0)$.
 - (2 pts.) Find the domain of $\frac{f(x)}{g(x)}$.
- (3 pts.) Match the following power functions to a possible graph. a) $4x^{-2}$ (b) $7x^{1/3}$ (c) $-5x^7$

