

Name _____

Homework 6
Sections 3.1 & 3.2

Be sure to use only algebra and material through section 3.2 for this assignment.

1. (2) Compute $f'(x)$ for $f(x) = 4x^3 - 7x^2 - 9x + 13$.

2. (4) Given the function $g(x) = (x^3 + \frac{1}{x})^2$, find $f'(x)$.

3. (4) Given the function $y = \pi z^\pi$, find

(a) the derivative of y with respect to z

(b) $\left. \frac{dy}{dz} \right|_{z=1}$

4. (2) Find the derivative of $f(x) = x^\pi + \pi^x$.

5. (2) Find $f'(1)$ for $f(t) = (\ln 3)3^t$.

6. (6) Find the equation of the tangent line to the graph of $g(x) = 2^x + 2\sqrt{x}$ at the point where $x = 1$.