

Name: _____
AP Calc: Chain Rule Homework

Date: _____
Ms. Loughran

In 1-6, find $f'(x)$.

1. $f(x) = (x^3 + 2x)^{37}$

2. $f(x) = \left(x^3 - \frac{7}{x}\right)^{-2}$

3. $f(x) = \frac{4}{(3x^2 - 2x + 1)^3}$

4. $f(x) = \sqrt{x^3 - 2x + 5}$

5. $f(x) = (5x + 8)^{13}(x^3 + 7x)^{12}$

6. $f(x) = \left(\frac{x-5}{2x+1}\right)^3$

7. If $y = \frac{1+x}{1-x}$, find $\frac{d^2y}{dx^2}$.

8. Given $f(x) = (2x + 7)^6(x - 2)^5$, find the values of x at which the curve $y = f(x)$ has a horizontal tangent line.