ICM Name_____

Chain Rule Day 2 Homework

Date_____ Period____

Differentiate each function with respect to *x*.

1) $y = (x^3 + 4)^5$

2) $y = (x^3 + 2)^4$

3) $y = (-5x^5 - 1)^2(5x^4 - 1)$

4) $y = (x^5 + 4)\sqrt[4]{x^4 + 1}$

5) $f(x) = \left(\dfrac{2x^3 + 5}{x^4 - 3}\right)^2$

6) $f(x) = \left(\dfrac{-5x^2 + 1}{3x^4 + 1}\right)^2$

7) $f(x) = (5x + 2)^{-2}$

8) $f(x) = \sqrt[3]{2x^2 + 1}$

9) $y = (5x^2 + 2)^{\frac{1}{3}}(3x^4 + 4)$

10) $y = \left(\dfrac{2x^5 - 5}{5x^2 - 3}\right)^{\frac{1}{3}}$