

Chain Rule Practice #2  
Calculus

Find the derivative of each of the following. Do not simplify your answers.

1.  $y = (2x - 7)^3$

2.  $y = (3x^2 + 1)^4$

3.  $y = \sqrt[3]{1 + \frac{1}{x^3}}$

4.  $y = \frac{1}{\left(x^2 - \frac{x}{2} + e\right)^5}$

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

6.  $y = \frac{-3}{\sqrt[5]{\left(\frac{3}{2x^3} - x\right)^3}}$

7.  $y = \frac{2(3x^{-4} - ex)^8}{7}$

8.  $y = \frac{(x-3)^2}{x}$

9.  $y = 2x(3x - 7x^2)^4$

10.  $y = \left(\frac{2}{\sqrt{x}} + \frac{3x}{4}\right) \left(\sqrt[3]{(3x^2 - 2x + 1)^4}\right)$

11.  $y = 2\sqrt[3]{x}(3 - x)^4$

12.  $y = \left(\frac{2\sqrt[3]{x^5}}{x^{-6} - 2x}\right)^3$

13.  $y = \frac{\sqrt{5x}}{3\sqrt{e-5x}}$

14.  $y = 7\sqrt{\frac{\left(\frac{1}{x} + 2x\right)(\sqrt[3]{x} + 5x)}{3x^2}}$

15.  $y = 2\left(\left(7x^{-2} + 2x\right)^{\frac{1}{2}}(5x^4 - x^2)\right)^{-2}$

16.  $y = \frac{\left(\frac{5}{3}x^{-1} - 3x^{\frac{1}{2}}\right)^3}{(2ex + 2x^3)^5}$

17.  $y = \frac{1}{2}\left(5x^7 - \frac{11\sqrt{x}}{x} + \frac{7}{x^3} - \pi x^e\right)$