The Chain Rule

1. Use the General Power Rule to find the derivative of the function
(similar to p.172 #24)

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

2. Use the General Power Rule to find the derivative of the function
(similar to p.172 #23)

$$f(x) = (5x - 3)^{1/3}$$

3. Use the General Power Rule to find the derivative of the function
(similar to p.172 #30)

$$y = \sqrt[5]{7x^2 - 4x + 2}$$

4. Find the derivative of the function
(similar to p.172 #50)

$$f(x) = \frac{7}{(x^2 - 9)^3}$$

5. Find the derivative of the function
(similar to p.172 #56)

$$f(x) = x^5(x - 7)^8$$

6. Find the derivative of the function
(similar to p.172 #62)

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

7. Find an equation of the tangent line to the graph of the function at the given point.
(similar to p.173 #64)

$$y = \left(7x^2 - 5x\right)^3 \quad at \quad (1,8)$$

8. Find an equation of the tangent line to the graph of the function at the given point.
(similar to p.173 #69)

$$y = \frac{5x-2}{\sqrt{x+2}} \quad at \quad (7,11)$$

9. $2000 is put into an account with an annual interest rate of r (in decimal form) compounded quarterly. At the end of 10 years, the balance A is:

$$A = 2000\left(1+\frac{r}{4}\right)^{40}$$

Find the rates of change of A with respect to r when (a) r = 0.02, (b) r = 0.10, (c) r = 0.15
(Similar to p.136 #71)