

October 3

SWBAT:

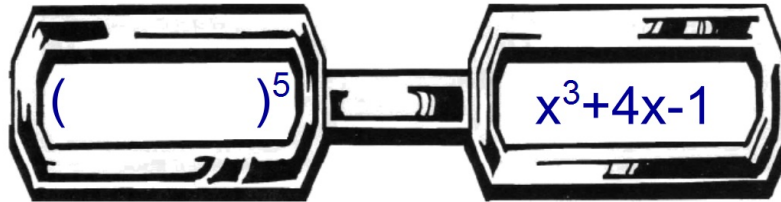
Evaluate Composite Functions
and Find the derivative using
the chain rule

Chain Rule

$$\frac{d}{dx}(f(g(x))) = f'(g(x)) g'(x)$$

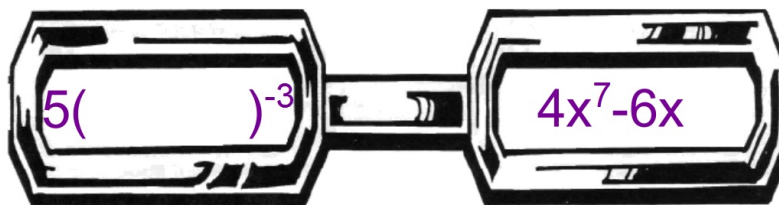
the derivative of the
outside function, leaving the
inside function alone Time the
derivative of the inside.

$$f(x) = (x^3 + 4x - 1)^5$$



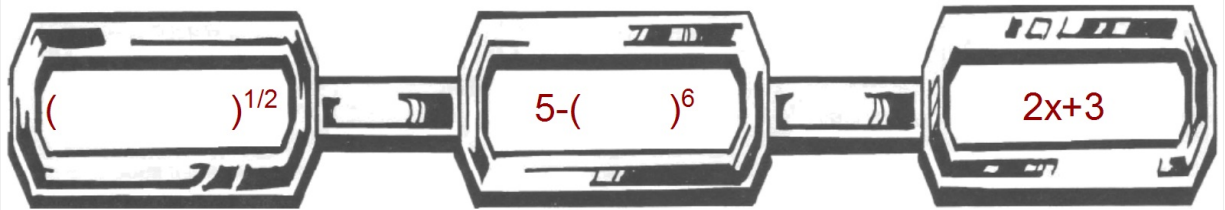
$$f'(x) = 5(x^3 + 4x - 1)^4(3x^2 + 4)$$

$$f(x) = \frac{5}{(4x^7 - 6x)^3} = 5(4x^7 - 6x)^{-3}$$



$$f'(x) = -15(4x^7 - 6x)^{-4}(28x^6 - 6)$$

$$f(x) = \sqrt{5 - (2x+3)^6} = (5 - (2x+3)^6)^{1/2}$$



$$f'(x) = \frac{1}{2} (5 - (2x+3)^6)^{-1/2} (0 - 6(2x+3)^5) (2)$$