

1. Differentiate  $y = -2(3x^2 + 2)^5$

2. Suppose  $y = \sqrt{u}$  and  $u = x^2 + 3x - 1$ .

a) Find  $\frac{dy}{dx}$

b) Find  $\frac{dy}{dx}$  at  $x = 2$ .

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

4. Differentiate  $f(x) = (2x - 1)^3(5x + 3)^4$  and simplify your answer by factoring.

Q: What five-letter word becomes shorter when you add two letters to it?