Lecture Seven Practice

Practice problems

Abstract. *Practice problems for Lecture Seven Content*

Problem. 1 : Compute the following derivative:

$$\frac{d}{dx}\left(x^4 + 8x^3 + 6x^2 - 40x + 25\right) = \boxed{}\ ?$$

Problem. 2 : Compute the following derivative:

$$\frac{d}{dx}\left(2e^{(x-5)}\right) = \boxed{}\ ?$$

Problem. 3 : Compute the following derivative:

$$\frac{d}{dx}\left(-5e^{(x)}\right) = \boxed{}\ ?$$

Problem. 4 : Find the equation of the line tangent to $f(x) = -x^3 + 9x^2 - 6x + 9$ at the point $(7, 65)$.

$y =$?

Problem. 5 : Compute the following derivative:

$$\frac{d}{dx}\left(x^3 - 3x^2 - 24x + 80\right) =$$?

Problem. 6 : Compute the first and second derivatives for the function $f(x) = -3x^3 - 45x^2 - 225x - 375$.

$f'(x) =$?

$f''(x) =$?