Assignment 3

1. Consider the function $f(x) = x^2 + 3x - 4$ and the point $x = 1$. Find the derivative of $f(x)$ at $x = 1$.

2. Consider the function $g(x) = 2x^3 - 5x^2 + x - 2$ and the point $x = 2$. Find the derivative of $g(x)$ at $x = 2$.

3. Consider the function $h(x) = 3x^4 - 2x^3 + 5x^2 - x + 1$ and the point $x = 0$. Find the derivative of $h(x)$ at $x = 0$.

4. Consider the function $i(x) = e^{2x} - 3x^2 + 4x - 1$ and the point $x = 1$. Find the derivative of $i(x)$ at $x = 1$.

5. Consider the function $j(x) = \sin(x) + \cos(x)$ and the point $x = 0$. Find the derivative of $j(x)$ at $x = 0$.

6. Consider the function $k(x) = \ln(x) + 2x$ and the point $x = 1$. Find the derivative of $k(x)$ at $x = 1$.

7. Consider the function $l(x) = x^5 - 3x^4 + 2x^3 - x + 1$ and the point $x = -1$. Find the derivative of $l(x)$ at $x = -1$.

8. Consider the function $m(x) = \frac{1}{x} + x^4$ and the point $x = 2$. Find the derivative of $m(x)$ at $x = 2$.

9. Consider the function $n(x) = x^2 + x^3 - 2x^4$ and the point $x = -1$. Find the derivative of $n(x)$ at $x = -1$.

10. Consider the function $o(x) = e^{-x} + x^2$ and the point $x = 0$. Find the derivative of $o(x)$ at $x = 0$.

11. Consider the function $p(x) = \tan(x) + \sec(x)$ and the point $x = \frac{\pi}{4}$. Find the derivative of $p(x)$ at $x = \frac{\pi}{4}$.

12. Consider the function $q(x) = \csc(x) + \cot(x)$ and the point $x = \frac{\pi}{2}$. Find the derivative of $q(x)$ at $x = \frac{\pi}{2}$.