Math 101-181-Sec.11 Quiz #3

Name: **ID:** **SR:**

Q.1: Suppose that $f(x)$ is differentiable function and satisfies the following: For all real number x, and y $f(x+y) = f(x) + f(y) + 2xy - 1$, $\lim_{x\to 0} \frac{f(x)-1}{x} = -2$, find $f^{\backslash}(3)$

Q.2: Find the tangent line to the parabola $y = x^2$ that passes through the point $(0, -4)$.

Q.3: If $f(2) = 10$, and $f^{\backslash}(x) = x^2 f(x)$ for all x. Find $f^{\backslash\backslash}(2)$

Q4. If $y = xsin(x)$ find $\frac{d^{35}y}{dx^{35}}$