26. $x^2 + 2x + 1$

$$\lim_{\Delta x \to 0} \frac{f(x+\Delta x) - f(x)}{\Delta x} = \frac{(x+\Delta x)^2 + 2(x+\Delta x) + 1 - (x^2 + 2x + 1)}{\Delta x}$$

$$\frac{x^2 + 2x\Delta x + \Delta x^2 + 2x + 2\Delta x + 1 - x^2 - 2x - 1}{\Delta x}$$

$$\lim_{\Delta x \to 0} \frac{\Delta x(2x + \Delta x + 2)}{\Delta x}$$

$$(x+\Delta x)^3$$

$$(x+\Delta x)(x+\Delta x)(x+\Delta x)$$

$$(x^2+2x\Delta x+\Delta x^2)(x+\Delta x)$$

$$x^3+2x^2\Delta x+x\Delta x^2+x^2\Delta x+2x\Delta x^2+\Delta x^3-x^3$$

$f(x) = x^2 \qquad f'(x) = ?$

$$\lim_{\Delta x \to 0} \frac{f(x+\Delta x) - f(x)}{\Delta x} = \frac{(x+\Delta x)^2 - x^2}{\Delta x}$$

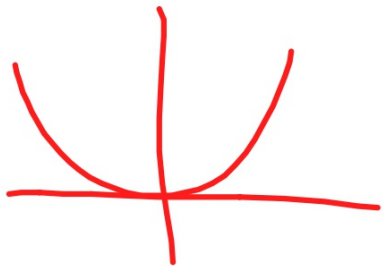
$$\frac{x^2 + 2x\Delta x + \Delta x^2 - x^2}{\Delta x}$$

$$\lim_{\Delta x \to 0} \frac{\Delta x(2x + \Delta x)}{\Delta x}$$

$$= 2x$$

$f(x) = x^2$

$f'(x) = 2x$



$f(x) = x^3$

$f'(x) = 3x^2$

$f(x) = \frac{3x^3}{3} - x^3$

$f'(x) = 3x^2$

$f(x) = x^3 + x^2 + 4x^0$

$f'(x) = 3x^2 + 2x$

$F'(x) = x^4 + x$

$f(x) = \frac{x^5}{5} + \frac{x^2}{2} + C$

$$f(x) = 4x^3 - 7x^2$$

$$f'(x) = 12x^2 - 14x$$

$$f'(x) = 2x^7 + x^5$$

$$f(x) = \frac{2x^8}{8} + \frac{x^6}{6}$$