The function $f(x)$ is approximated near $x = 0$ by the second degree Taylor polynomial
$P2(x) = 1 - 3x + 2x^2$

Give values: $f(0), f'(0), \ f''(0)$

Solution:

$$P2(x) = f(0) + \frac{x}{1!}f'(0) + \frac{x^2}{2!}f''(0)$$

So

$$f(0) = 1$$

$$f'(0) = -3 * 1! = -3$$

$$f''(0) = 2 * 2! = 2 * 2 = 4$$

Answer: $f(0) = 1,$ $\qquad$ $f'(0) = -3,$ $\qquad$ $f''(0) = 4$