$$f\left(x_0 \pm dx\right) = f\left(x_0\right) \pm dx f^{'}|_{x_0} + \frac{1}{2} dx^2 f^{''}|_{x_0} \pm \frac{1}{3!} dx^3 f^{'''}|_{x_0} + \ \ldots \qquad (2)$$