$$\cos(x) = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \cdots$$

$$f(x+h) = f(x) + f'(x)h + \frac{f''(x)h^2}{2!} + \frac{f'''(x)h^3}{3!} + \cdots$$

By mac laurine series (consume $x=0$)

$$f(0+h) = f(0) + f'(0)h + \frac{f''(0)h^2}{2!} + \cdots$$

$f(x) = \cos x \to 1$ $\qquad$ $f'(x) = -\sin x \to 0$

$f''(x) = -\cos x \to -1$ $\qquad$ $f'''(x) = \sin x \to 0$

$f^{iv}(x) = \cos x \to 1$ $\qquad$ $f^{v}(x) = -\sin x \to 0$

$$f(h) = \cos(0) - \sin(0)h - \frac{\cos(0)h^2}{2!} + \frac{\sin(0)h^3}{3!} + \cdots$$

let $h = x - a$

$$f(x-a) = \cos(0) - (x-a)\sin(0) - \frac{\cos(0)(x-a)^2}{2!} + \cdots$$

at $a = 0$

$$f(x) = \cos(0) - x\cos 0 - \frac{x^2\cos 0}{2!} + \frac{x^3\sin 0}{3!} + \cdots$$

$$\cos x = 1 - x.0 - \frac{x^2}{2!} + \frac{x^3.0}{3!} + \cdots$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \cdots$$