Secant

F(x)= $x^2 + 3$ starting point [1,4]

Solution:

$$x_0 = 1$$
$$x_1 = 4$$
$$x_2 = x_1 - \frac{f(x_1) * (x_1 - x_0)}{f(x_1) - f(x_0)}$$
$$x_2 = 4 - \frac{f(4) * (4 - 1)}{f(4) - f(1)}$$
$$x_2 = 4 - \frac{(4^2 + 3) * (4 - 1)}{(4^2 + 3) - (1^2 + 3)}$$
$$x_2 = 4 - \frac{19 * 2}{19 - 4}$$
$$x_2 = 4 - \frac{38}{15}$$
$$x_2 = 4 - 2.53$$

$$x_2 = 1.47$$

.....

$$x_3 = x_2 - \frac{f(x_2) * (x_2 - x_1)}{f(x_2) - f(x_1)}$$
$$x_3 = 1.47 - \frac{f(1.47) * (1.47 - 4)}{f(1.47) - f(4)}$$
$$x_3 = 1.47 - \frac{(1.47^2 + 3) * (1.47 - 4)}{(1.47^2 + 3) - (4^2 + 3)}$$
$$x_3 = 1.47 - \frac{5.1609 * -2.53}{5.1609 - 19}$$
$$x_3 = 1.47 - \frac{-13.057}{-13.8391}$$
$$x_3 = 1.47 - 0.9434$$

$$x_3 = 0.5266$$