x_1	y_1	∇f_1	$\nabla^2 f_0$	$\nabla^3 f_0$	$\nabla^4 f_0$	$\nabla^5 f_0$
x_2	y_2	∇f_2	$\nabla^2 f_1$	$\nabla^3 f_1$	$\nabla^4 f_1$	
x_3	y_3	∇f_3	$\nabla^2 f_2$	$\nabla^3 f_2$		
x_4	y_4		$\nabla^2 f_3$			

$$\nabla f(a) = f(a) - f(a-h)$$

Solved problem

Tabulate $f(x) = x^2 + 4x + 1 \; from \; 1 \; to \; 10$. Hence use the results to find:

(i) $\nabla^2 f_2 \; at \; x = 2$

(ii) $\Delta^2 f_2 \; at \; x = 3$

(iii) δf_3 at $x = 4$

(iv) $\mu f_2 \; at \; x_0 = 4$

(v) $\delta^2 f_2 \; at \; x_0 = 2$

Solution