

Soal

Diketahui Data - Data
 (0, -6); (2, 9); (4, 10)

x	f(x)	Δf(x)	Δ²f(x)
0	-6	10	
2	9	6	-9
4	10		

$h=2$

$s = \frac{x - (0)}{2} = \frac{x-0}{2}$

$$P_2(x) = f(x_0) + \Delta f(x_0) \cdot s + \frac{\Delta^2 f(x_0)}{2} \cdot s(s-1)$$

$$= -6 + 10 \cdot \left(\frac{x}{2}\right) + \frac{-9}{2} \cdot \left(\frac{x}{2}\right) \left(\frac{x}{2} - 1\right) - 1$$

$$= -6 + 5x - \frac{9}{2} \cdot \left(\frac{x}{2}\right) \left(\frac{x}{2} - 1\right)$$

$$= -6 + 5x - 2 \cdot \left(\frac{x}{2}\right) \left(\frac{x}{2} - 1\right)$$

$$= -6 + 5x - x \left(\frac{x}{2} - 1\right)$$

$P(1) = -6 + 5(1) - 1 \left(\frac{1}{2} - 1\right)$

$$= -6 + 5 - 1 \left(\frac{1}{2} - 1\right)$$

$$= -1 - 1 - 0,5$$

$$= 1 - 0,5$$

$$= -0,5 \quad \checkmark = -\frac{1}{2}$$



10 + 3 \cdot 1 = 13

(0, -6); (2, 9); (4, 10)

x	f(x)	Δf(x)	Δ²f(x)
0	-6	10	
2	9	6	-9
4	10		

$h=2$

$s = \frac{x-4}{2}$

$P_2(x) = f(x_2) + \Delta f(x_2) \cdot s + \frac{\Delta^2 f(x_2)}{2} \cdot s(s+1)$

$$= 10 + 6 \cdot \left(\frac{x-4}{2}\right) + \frac{-9}{2} \cdot \left(\frac{x-4}{2}\right) + 1$$

$$= 10 + 3(x-4) - 2 \cdot \left(\frac{x-4}{2}\right) \left(\frac{x-4}{2} + 1\right)$$

$$= 10 + 3x - 12 - (x-4) \left(\frac{x-4}{2} + 1\right)$$

$$= 10 + 3x - 12 - (x-4) \frac{x-2}{2}$$

$f(1) = 10 + 3(1) - 12 - (1-4) \left(\frac{1-2}{2}\right)$

$$= 10 + 3 - 12 - (-3) \left(\frac{1-2}{2}\right)$$

$$= 10 + 3 - 12 + 3 \left(\frac{-2}{2}\right)$$

$$= 10 + 3 - 12 + 3 \cdot (-1)$$

$$= 10 + 3 - 12 - 3 = -2$$

