

Diketahui data-data berikut :

$(0, -6)$ ;  $(2, 9)$ ;  $(4, 10)$  bentuk  $f(x)$

$$f(x) \approx p_2(x) = f(x_0) + \Delta f(x_0) \cdot s + \frac{\Delta^2 f(x_0)}{2!} \cdot s(s-1)$$

$x$	$f(x)$	$\Delta f(x)$	$\Delta^2 f(x)$	
0	-6			$\rightarrow f(x_0)$
		10		$\rightarrow \Delta f(x_0)$
2	9		-9	$\rightarrow \Delta^2 f(x_0)$
		6		$h = 2$
4	10			$s = \frac{x-x_0}{h} = \frac{x-0}{2} \quad   \quad s = \frac{x-x_2}{h} = \frac{x-4}{2}$

$$f(x) \approx p_2(x) = f(x_0) + \Delta f(x_0) \cdot s + \frac{\Delta^2 f(x_0)}{2!} \cdot s(s-1)$$

$$= -6 + 10 \left( \frac{x-0}{2} \right) + \frac{(-9)}{2!} \left( \frac{x-0}{2} \right) \left( \frac{x-0}{2} - 1 \right)$$

$$= -6 + 5x - \frac{9}{2} \left( \frac{x-0}{2} - 1 \right)$$

$$f(1) = -6 + 5(1) - \frac{9}{2} \left( \frac{1-0}{2} - 1 \right)$$

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

$$= -1 - \frac{9}{2} \left( -\frac{1}{2} \right)$$

$$= -1 + \frac{9}{4}$$

$$= \frac{-4}{4} + \frac{9}{4}$$

$$= \frac{5}{4}$$

$$f(x) \approx p_2(x) = f(x_2) + \Delta f(x_2) \cdot s + \frac{\Delta^2 f(x_2)}{2!} \cdot s(s+1)$$

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

$$= 10 + 3(x-4) + \frac{(-9)}{2} \left( \frac{x-4}{2} \right) \left( \frac{x-4}{2} + 1 \right)$$

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

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

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

$$= 10 - 9 + 3 \left( \frac{-1}{2} \right)$$

$$= 1 + \frac{3}{2}$$

$$= \frac{2}{2} + \frac{3}{2}$$

$$= \frac{5}{2}$$

$$= \frac{5}{2}$$