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F(9,2)

Polinom newton derajat 3

$$P(x) = F[x_0] + F[x_0, x_1](x - x_0) + F[x_0, x_1, x_2](x - x_0)(x - x_1) + F[x_0, x_1, x_2, x_3](x - x_0)(x - x_1)(x - x_2)$$

Dimana $F[x_0, x_1]$, $F[x_0, x_1, x_2]$ dan $F[x_0, x_1, x_2, x_3]$ adalah selisih terbagi pertama, kedua, ketiga yg dihitung dari tabel data,

Tabel data yg diberikan:

| x | F(x) |
|---|---|
| 3 | 8 |
| 6 | 33 |
| 9 | 94 |
| 12 | 185 |

Kita akan menggunakan data $(x_0, F[x_0])$, $(x_1, F[x_1])$, $(x_2, F[x_2])$, $(x_3, F[x_3])$

$(x_0, F[x_0]) = (3, 8)$

$(x_1, F[x_1]) = (6, 33)$

$(x_2, F[x_2]) = (9, 94)$

$(x_3, F[x_3]) = (12, 185)$

$$F[x_0, x_1] = \frac{F[x_1] - F[x_0]}{x_1 - x_0} = \frac{33 - 8}{6 - 3} = \frac{25}{3} = 8,3$$

$$F[x_0, x_1, x_2] = \frac{F[x_1, x_2] - F[x_0, x_1]}{x_2 - x_0} = \frac{\frac{94 - 33}{9 - 6} - 8,3}{9 - 3}$$

$$= \frac{61/3 - 8,3}{6} = \frac{61 - 25}{6} = 12,3$$

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$$F[x_0, x_1, x_2, x_3] = \frac{F[x_1, x_2, x_3] - F[x_0, x_1, x_2]}{x_3 - x_0}$$

$$= \frac{\frac{185 - 94}{12 - 9} - 12,3}{12 - 3} = \frac{91/3 - 12,3}{9} = \frac{91 - 37}{3} = 18,3$$

$$P(9) = F[x_0] + F[x_0, x_1](9-3) + F[x_0, x_1, x_2](9-3)(9-6) + F[x_0, x_1, x_2, x_3](9-3)(9-6)(9-12)$$

$$P(9) = 8 + 8,3(6) + 12,3(6)(3) + 18,3(6)(3)(-3)$$

$$P(9) = 8 + 49,98 - 14,814 + (-16,5) = 26,66 //$$