No.

Date . .

$f(x) = 4x^3 - 15x^2 + 17x - 6$

Cari • $F'(x)$ / turunan Pertama

$f'(x) = 12x^2 - 30x + 17$

(1) iterasi

$x_0 = 3$

- $4(3)^3 - 15(3)^2 + 17(3) - 6$
  $108 - 135 + 51 - 6 = 18$

- $12(3)^2 - 30(3) + 17$
  $108 - 90 + 17 = 35$

iterasi (2)

$$x_1 = x_0 - \frac{F(x_0)}{f'(x_0)}$$

$$= 3 - \frac{18}{35}$$

$$= 2,48571$$

- $4(2,48571)^3 - 15(2,48571)^2 + 17.(2,48571) - 6 = 5,101012$

- $12(2,48571)^2 - 30(2,48571) + 17 = 16,57375$

No.

Date . .

iterasi (3)

$$x_2 = x_1 - \frac{F(x_1)}{f'(x_1)}$$

$$= 2,148571 - \frac{5,010112}{16,57375}$$

$$= \boxed{2,18342}$$

- $4(2,18342)^3 - 15(2,18342)^2 + 17(2,18342) - 6$
  $= 1,24457$

- $12(2,18342)^2 - 30(2,18342) + 17$
  $= 8,70527$

---

iterasi (4)

$$x_3 = x_2 - \frac{F(x_2)}{f'(x_2)}$$

$$= 2,18342 - \frac{1,24457}{8,70527}$$

$$= \boxed{2,04045}$$

- $4(2,04045)^3 - 15(2,04045)^2 + 17(2,04045) - 6$
  $= 0,217241$

- $12(2,04045)^2 - 30(2,04045) + 17$
  $= 5,174773$

No.

Date . .

iterasi (5)

$$x_4 = x_3 - \frac{F(x_3)}{F'(x_3)}$$

$$= 2,04095 - \frac{0,217241}{5,74773}$$

$$= \boxed{2,00265}$$

- $4(2,00265)^3 - 15(2,00265)^2 + 17(2,00265) - 6$
  $= 0,0133133$

- $12(2,00265)^2 - 30(2,00265) + 17$
  $= 5,04778$

iterasi (6)

$$x_5 = x_4 - \frac{f(x_4)}{f'(x_4)}$$

$$= 2,00265 - \frac{0,0133133}{5,04778}$$

$$= \boxed{2,00001}$$

- $4(2,00001)^3 - 15(2,00001)^2 + 17(2,00001) - 6$
  $= 0,000005$

- $12(2,00001)^2 - 30(2,00001) + 17$
  $= 5,00018$

No.

Date . .

iterasi	xn	F(x)	f'(x)
1	3	18	35
2	2,485714	5,010012	16,57375
3	2,183942	1,24457	8,70527
4	2,04095	0,217241	5,74773
5	2,00265	0,0133133	5,04778
6	2,00001	0,00005	5,00018

iterasi berhenti di iterasi ke-6 karena nilai f(x) sudah mendekati nol

sehingga akar yg didapat adalah 2,00001