Grafik yöntemi

$x_0 = 1.5 \quad \Delta x = 0.75$

$f(x) \rightarrow x^2 - 6x + 5$

$\varepsilon = 0.0235$

$-1 \quad -5$

1. iterasyon

x	f(x)	
1.5	-1.75	0.75
2.25	-3.43	
3	-4	0.75
3.75	-3.43	
4.50	-1.75	
5.25	+1.0625	

2. iterasyon $\Delta x = 0.75/2 = 0.375$

x	f(x)	
4.50	-1.75	0.375
4.875	-0.4844	0.375
5.25	+1.0625	

Δx

3. iterasyon $\Delta x = 0.375/2 \rightarrow 0.1875$

x	f(x)
4.875	-0.4844
5.0625	0.2639

Δ_x 0.0625 0.2531

4. iterasyon $\Delta_x = 0.1875/2 = 0.094$

x	f(x)
4.875	-0.4844
4.969	-0.1230
5.063	0.2559

5. iterasyon $\Delta_x = 0.094/2 = 0.047$

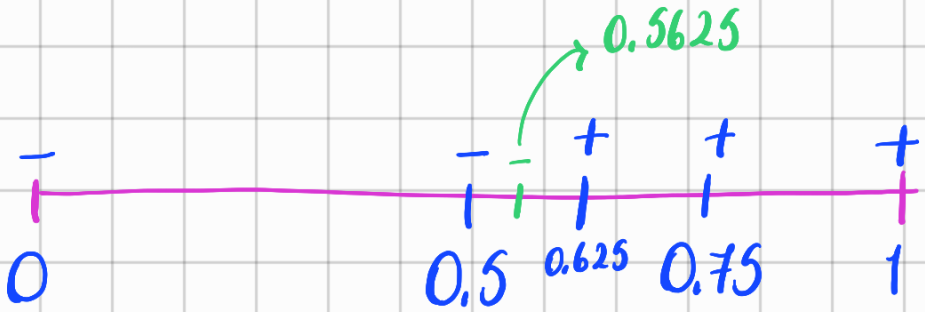
	x	f(x)
Δ_x	4.969	-0.1230
	5.016	0.064

6. iterasyon $\Delta_x = 0.047/2 = 0.0235$

	x	f(x)	
Δ_x	4.969	-0.1230	
	4.9923	-0.0299	
Δ_x	5.016	0.0640	→ f(x) = Ø

↳ $|fark| < \varepsilon$ $x_{kök} = 5$

$f(x) = x^3 - 7x^2 + 14x - 6$ $[0,1]$ Hata $\varepsilon = 0.01$



1.adım: $f(a)$'yı hesapla

2.adım: $f(b)$'yi hesapla

3.adım: hata payına bak

4.adım: Tekrar bir orta nokta belirle

5.adım: $f(c)$'yi bul

6.adım: $f(c) \cdot f(b)$

7.adım: Hata payına bak

1.iterasyon $[0,1]$

$f(0) = -6$ $\quad f(0) \cdot f(1) < 0$

$f(1) = 2$

Hata $\rightarrow \frac{b-a}{} < \varepsilon$

Hata $= \frac{1-0}{2^1} < 0.01$ $\rightarrow$ 2^n

$C = \frac{1+0}{2} = 0.5$ $\quad f(0.5) = -0.625$

$f(0.5).f(1) < 0$

$[0.5, 1]$

Hata $\rightarrow \frac{1-0.5}{2^2} < 0.01$

2. iterasyon

$f(0.5) \rightarrow -0.625$

$f(1) \rightarrow 2$

$C = \frac{1+0.5}{2} = 0.75$

$f(0.75) = 0.9844$

$f(0.5)\, f(0.75) < 0$

3. iterasyon

$f(0.5) = -0.625$ $\quad [0.5, 0.75]$

$f(0.75) = 0.9844$

Hata $\rightarrow \frac{0.75 - 0.5}{2^3} < 0.01$

$C = \frac{0.75 + 0.5}{2} \rightarrow 0.625$

$f(0.625) \rightarrow 0.2598$

$f(0.5)\, f(0.625) < 0$

4. iterasyon $[0.5, 0.625]$

$f(0.5) = -0.625$

$f(0.625) = 0.2598$

$C = \frac{0.5 + 0.625}{2} = 0.5625$

$f(0.5625) \rightarrow -0.1618$

$f(0.5625) \cdot f(0.625) < 0$

Hata $\rightarrow \frac{0.625 - 0.5}{2^4} < 0.01$

$x_{Kök} \rightarrow 0.5625$