SORU:1 | Hacer USTA
0222022400S

$f(x) = x^3 - 2x^2 - 5 = 0$

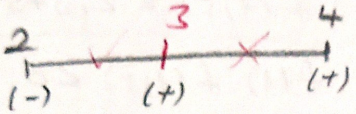
$f(2) = -5$

$f(4) = 27$

$f(2) \cdot f(4) < 0$ f(x) fonksiyonu sürekli olduğu için [2,4] aralığında kök vardır.

1. iterasyon:

$\frac{2+4}{2} = 3$



$f(3) = 27 - 18 - 5 = 4$

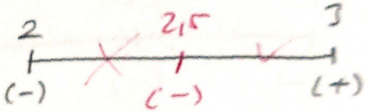
$f(2) \cdot f(3) < 0$ olduğundan

[2,3]

2. iterasyon:

$\frac{2+3}{2} = 2,5$

$f(2,5) = -1,875$



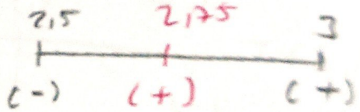
$f(2,5) \cdot f(3) < 0$ olduğundan

[2,5, 3]

3. iterasyon:

$\frac{2,5+3}{2} = 2,75$

$f(2,75) = 0.671875$



$f(2,5) \cdot f(2,75) < 0$

[2,5, 2,75]

4. iterasyon:

$\frac{2,5+2,75}{2} = 2,625$

$f(2,625) = -0,693359375$

Soru 2)

Hacer USTA
02270224005

$f(x) = x^3 + 4x^2 - 10 = 0$

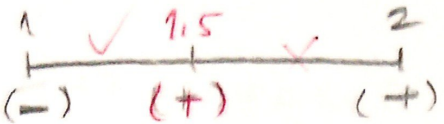
$f(1) = -5$

$f(2) = 14$

$f(1) \cdot f(2) < 0$ $f(x)$ süreklidir bu yüzden $[1,2]$ aralığında kök vardır

1. iterasyon:

$\frac{1+2}{2} = 1,5$

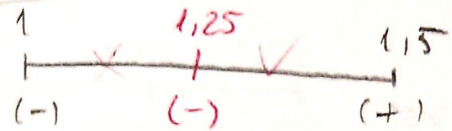


$f(1,5) = 2,375$

$f(1) \cdot f(1,5) < 0$

2. iterasyon:

$\frac{1+1,5}{2} = 1,25$

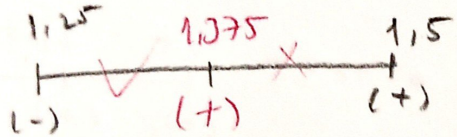


$f(1,25) = -1,796875$

$f(1,25) \cdot f(1,5) < 0$

3. iterasyon:

$\frac{1,25+1,5}{2} = 1,375$

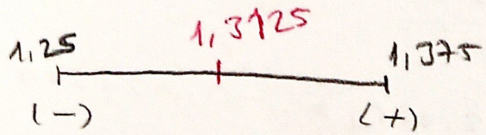


$f(1,375) = 0,16210\ 9375$

$f(1,25) \cdot f(1,375) < 0$

4. iterasyon:

$\frac{1,25+1,375}{2} = 1,3125$



$f(1,3125) = -0,184638867 18$