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**Kelas : IF3A**

1. Carilah nilai x yang mendekati dengan lima kali iterasi fungsi;

a. dengan batas a=0 dan b=1

b. dengan batas a=1 dan b=2

2. Carilah nilai x yang mendekati sampai dua posisi desimal dari fungsi;

a. dengan batas a=-1 dan b=0

b. dengan batas a=1 dan b=2

jawab

**1.a.batas a=0, b=1**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Iterasi** | **a** | **b** | **c** | **f(a)** | **f(c)** | **f(a).f(c)** | **|b-a|** |
| 1 | 0 | 1 | 0.5 | -1 | -0.4375 | 0.4375 | 1 |
| 2 | 0.5 | 1 | 0.75 | -0.4375 | 0.066406 | -0.0905 | 0.5 |
| 3 | 0.5 | 0.75 | 0.625 | -0.4375 | -0.2241 | 0.097305 | 0.25 |
| 4 | 0.625 | 0.75 | 0.6875 | -0.22241 | -0.0891 | 0.019816 | 0.125 |
| 5 | 0.6875 | 0.75 | 0.71875 | -0.0891 | -0.066406 | 0.001281 | 0.0625 |

Disimpulkan nilai x mendekati adalah x=0.71875

**1.b.batas a=1, b=2**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Iterasi** | **a** | **b** | **c** | **f(a)** | **f(c)** | **f(a).f(c)** | **|b-a|** |
| 1 | 1 | 2 | 1.5 | -2 | -1.15547 | 2.31093 | 1 |
| 2 | 1.5 | 2 | 1.75 | -1.15547 | -0.49712 | 0.5744 | 0.5 |
| 3 | 1.75 | 2 | 1.875 | -0.49712 | -0.11298 | 0.05466 | 0.75 |
| 4 | 1.875 | 2 | 1.9375 | -0.11298 | 0.09208 | -0.01045 | 0.125 |
| 5 | 1.875 | 1.90625 | 1.90625 | -0.11298 | -0.01135 | 0.001282 | 0.624 |

Disimpulkan x mendekati adalah x=1.90625

**2.a.batas a=-1, b=0**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Iterasi** | **a** | **b** | **c** | **f(a)** | **f(c)** | **f(a).f(c)** | **|b-a|** |
| 1 | -1 | 0 | -0.6 | -4 | 0.4375 | -1.75 | 1 |
| 2 | -1 | -0.5 | -0.75 | -4 | -1.00791 | 4.015625 | 0.5 |
| 3 | -0.75 | -0.5 | -0.625 | -1.00391 | -0.12915 | 0.129655 | 0.25 |
| 4 | -0.625 | -0.5 | -0.5625 | -0.12915 | 0.187973 | -0.02428 | 0.125 |
| 5 | -0.625 | -0.5625 | -0.59375 | -0.12915 | 0.038436 | -0.00496 | 0.0625 |
| 6 | -0.625 | -0.5625 | -0.60938 | -0.12915 | -0.04303 | 0.005557 | 0.0312 |
| 7 | -0.60935 | -0.59375 | -0.60156 | -0.04303 | -0.00177 | 7.41385 | 0.0156 |

Disimpulkan nilai x yang mendekati sampai 2 posisi desimal adalah x=-0.60156

**2.b.batas a=1, b=2**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Iterasi** | **a** | **b** | **c** | **f(a)** | **f(c)** | **f(a).f(c)** | **|b-a|** |
| 1 | 1 | 2 | 1.5 | -0.4597 | -0.92926 | 0.42718 | 1 |
| 2 | 1.5 | 2 | 1.75 | -0.92926 | -1.17825 | 1.0949 | 0.5 |
| 3 | 1.75 | 2 | 1.375 | -1.17825 | -1.29953 | 1.53117 | 0.25 |
| 4 | 1.875 | 2 | 1.9375 | -1.29953 | -1.35854 | 1.76547 | 0.125 |
| 5 | 1.9375 | 2 | 1.96875 | -1.35854 | -1.38753 | 1.88507 | 0.0625 |
| 6 | 1.96875 | 2 | 1.98438 | -1.38753 | -1.40189 | 1.94517 | 0.0312 |
| 7 | 1.98438 | 2 | 1.99219 | -1.416189 | -1.40903 | 1.9753 | 0.0156 |

Disimpulkan nilai x yang mendekati sampai 2 posisi desimal adalah x=1.99719