Nome: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_/\_\_\_\_\_\_/\_\_\_\_\_

1) Utilizando o método de Secante, determine a raiz da função: , considerando x(1)=0, x(2)=0.1, com .

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| i | x(i) | x(i+1) | x(i+2) | f(x(i)) | f(x(i+1)) |
| 1 | 0 | 0.1 | 1.7207 | -2 | -1.8838 |
| 2 | 0.1 | 1.7207 | 0.2196 | -1.8838 | 23.6422 |
| 3 | 1.7207 | 0.2196 | 0.3200 |  |  |
| 4 | 0.2196 | 0.3200 | 1.0164 |  |  |
| 5 | 0.3200 | 1.0164 | 0.5569 |  |  |

1) Utilizando o método de Newton-Raphson, determine a raiz da função: , considerando x(1)=0.1, com .

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| i | x(i) | x(i+1) | f(x(i)) | f’(x(i)) |
| 1 | 0.1 | 1.5083 | -1.8838 | 1.3376 |
| 2 | 1.5083 | 1.1255 | 13.9021 | 36.3231 |
| 3 | 1.1255 | 0.8480 | 4.4163 | 15.9144 |
| 4 | 0.8480 | 0.7176 | 1.1175 | 8.5702 |
| 5 |  |  |  |  |



2) Utilizando o método da bissecção, determine a raiz da função  , considerando o intervalo [0.5:2], com :

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| i | a | x | b | f(x) | f(a) | f(b) |
| 1 | 0.5 | 1,25 | 2 | -1.7625 | 0.7500 | -4.5000 |
| 2 | 0.5 | 0.8750 | 1,25 | -0.6228 | 0.7500 | -1.7625 |
| 3 | 0.5 |  | 0.8750 |  | 0.7500 | -0.6228 |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |

2) Utilizando o método da falsa posição, determine a raiz da função  , considerando o intervalo [0.5:2], com :

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| i | a | x | b | f(x) | f(a) | f(b) |
| 1 | 0.5 | 0.7143 | 2 | -0.1102 | 0.7500 | -4.5000 |
| 2 | 0.5 |  | 0.7143 |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |

3) Resolva o sistema utilizando o método iterativo de Gauss-Seidel considerando as condições iniciais: .



Complete a tabela:

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |