

Task 1

Entradas

teta1=1 teta2=8

```
newton [0.96988621 0.11078792 0.07612798]  
broyden [0.96988628 0.11078785 0.07612814]
```

Task 2

Entradas

```
a = 1      b = 5  
c1= 0.25   c2=0.9      c3=-2.0      c4=1.2  
derivada x=2 dx=0.1
```

Saidas

```
newtown: 4.23510398933272  
biseçao Raiz: 4.235014678141322  
Quadratura Polinomial Integral: 67.91222329275799  
Gauss-Legendre Integral: 67.83773476996839  
Derivada DF passo afrente: 2.926731502714661  
Derivada DF passo atras: 2.463956242793275  
Derivada DF passo central: 2.695343872753968  
Derivada RE: 2.6839159288927217
```

Task 3

Entradas

```
w1 = 0.2    w2 = 1.0    w3 = 2.0  
m = 1      c = 0.1      k = 2      a1 = 1.0      a2 = 2.0      a3 = 1.5  
dt=0.1s T=100s
```



```

1 Tempo,Deslocamento,Velocidade,Acelera◆◆◆
2 0.000000000000000e+00,0.000000000000000e+00,0.000000000000000e+00,1.5000
3 1.000000000000056e-01,7.803287945810269410e-03,1.586982622461217129e-01,1.6582
4 2.0000000000000111e-01,3.211020775452994025e-02,3.284964170271319484e-01,1.7218
5 3.0000000000000444e-01,7.355738572702699707e-02,4.999475119653706834e-01,1.6918
6 4.0000000000000222e-01,1.318497339799262480e-01,6.639318708326162888e-01,1.5737
7 5.000000000000000e-01,2.058129866896956650e-01,8.120473907103182842e-01,1.3763
8 5.9999999999999978e-01,2.934832444282453046e-01,9.369569317188195523e-01,1.1118
9 6.9999999999999956e-01,3.92228528833952069e-01,1.032679048622583862e+00,7.9520
10 7.9999999999999934e-01,4.988961004473426719e-01,1.094810908101063074e+00,4.4295
11 8.9999999999999912e-01,6.099783251018553454e-01,1.120675260176318577e+00,7.2856
12 9.9999999999999890e-01,7.217892255037544613e-01,1.109386659868666136e+00,-2.971
13 1.09999999999999867e+00,8.306435480945086880e-01,1.061835626716683301e+00,-6.495
14 1.1999999999999956e+00,9.330302200072704277e-01,9.805929405614263183e-01,-9.684
15 1.3000000000000444e+00,1.02577246167885161e+00,8.69739651586943903e-01,-1.2391
16 1.4000000000000133e+00,1.106167537813275814e+00,7.346315478036208324e-01,-1.451
17 1.5000000000000222e+00,1.172100139991556933e+00,5.816093957523007507e-01,-1.596
18 1.6000000000000311e+00,1.222124653376654324e+00,4.176688079338259918e-01,-1.669
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21 1.9000000000000577e+00,1.27309073447192020e+00,-6.739409724452002926e-02,-1.46
22 2.0000000000000444e+00,1.259338439434085855e+00,-2.044662995058885435e-01,-1.271
23 2.1000000000000533e+00,1.232915874767384512e+00,-3.200635286715802774e-01,-1.031
24 2.2000000000000622e+00,1.196168083616057976e+00,-4.104712527391580212e-01,-7.69
25 2.3000000000000711e+00,1.151739021472511837e+00,-4.734450555595990373e-01,-4.891
26 2.4000000000000799e+00,1.102418761794712987e+00,-5.083187242400567518e-01,-2.101
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164 1.619999999999996021e+01, -8.747626177921397073e-01, 4.322008687259104587e-01, 1.493e+01
165 1.629999999999996163e+01, -8.250056830642139571e-01, 5.534944781173285477e-01, 9.261e+01
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