```
C:\Users\ricar\AppData\Local\Programs\Python\Python39\python.exe "C:/Users/ricar/Desktop/python-scripts/Cál
|-----------------------------------------------------------------------------------------------------|
|                                          QUESTAO 01                                                 |
|-----------------------------------------------------------------------------------------------------|
Calcular o valor do coeficiente de determinação R² da equação exponencial e logarítmica apresentadas
na aula. Em seguida, justifique qual delas melhor se ajustou aos pontos.
*-----------------------------------------------------------------------------------------------------*
Equação exponencial: g3(x) = 2.37156*e^(0.3125*x)

SQReg1 = [5.100649757300635, 1.143493632943119, 0.3091255641501263, 7.714827022355412]
SQTot1 = [19.372321959999997, 15.13676836, 13.75148889, 11.700504359999998]
E_SQReg1 = 14.268095976749294
E_SQTot1 = 59.96108356999999

R²_exp = 0.23795593954022495

Equação logarítmica: g2(x) = 3.3833*Ln(x) + 2.8119

SQReg2 = [7.22588161, 0.11763194940973451, 1.0585013672036188, 4.00860346916929]
SQTot2 = [19.372321959999997, 15.13676836, 13.75148889, 11.700504359999998]
E_SQReg2 = 12.410618395782642
E_SQTot2 = 59.96108356999999

R²_ln = 0.20697788727073604

A equação exponencial se ajustou melhor aos pontos, pois:

                        R²_exp > R²_ln
*-----------------------------------------------------------------------------------------------------*
```

```
|-----------------------------------------------------------------------------------------|
|                                  QUESTAO 02                                             |
|-----------------------------------------------------------------------------------------|

*-----------------------------------------------------------------------------------------*
n = 7

x = [0, 1, 2, 3, 4, 5, 6, 21]
y = [32, 47, 65, 92, 132, 190, 275, 833]

lny = [3.4657359027997265, 3.8501476017100584, 4.174387269895637, 4.5217885770490405, 4.882801922586371, 5.247024072160486, 5.616771097666572, 31.758656443867897]
xy = [0, 47, 130, 276, 528, 950, 1650, 3581]
xlny = [0.0, 3.8501476017100584, 8.348774539791274, 13.565365731147121, 19.531207690345482, 26.23512036080243, 33.70062658599943, 105.23124250979579]
x² = [0, 1, 4, 9, 16, 25, 36, 91]

Eq. (a) = (7*105.23124250979579 - 21*31.758656443867897) / (7*91 - 21²)
a = 0.3555454706497185

Eq. (b) = (21*105.23124250979579 - 31.758656443867897*91) / (21² - 7*91)
b = 3.4703145086034

a)

Resposta: y = 32.146851316317 48*e^(0.3555454706497185*x)

b) y(bactérias) = 2000

ln(2000/32.146851316317 48) = 0.3555454706497185*x
x = 4.130587950938683/0.3555454706497185

Resposta: x(horas) = 11.61760813150146
*-----------------------------------------------------------------------------------------*

Process finished with exit code 0
```