AULE FATIMAH

ENG252 ASSIGNMENT

BIOMEDICAL

18/SN10810074

$y = y_0 e^{kt}$

$y = 3y_0$; $\frac{y}{y_0} = 3$

A: $\frac{y}{y_0} = e^{kt} = 3$ at $t = 9$

B: $\frac{y}{y_0} = e^{kt} = 9$ at $t = 18$

therefore: $y_0 = 50$ ---(i)

$y_0 = 150$ ---(ii)

$\therefore y = 50e^{kt}$ ---(iii)

$y = 150e^{kt}$ ---(iv)

$\therefore 3 = e^{kt}$

$\ln 3 = kt$

$\ln 3 = 9k$

$k = \frac{\ln 3}{9}$

$k = 0.122$

$9 = e^{kt}$

$\ln 9 = 18k$

$\frac{\ln 9}{18} = k$

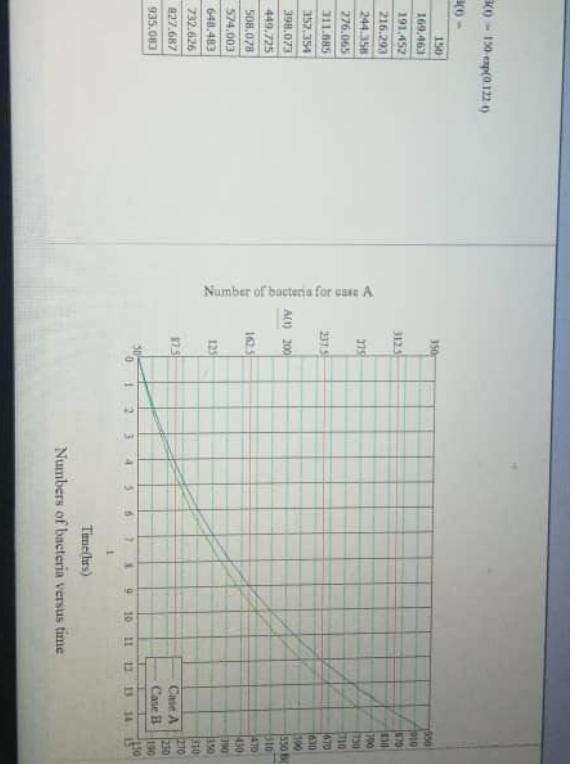
$k = 0.122$

$\therefore y = 50e^{0.122t}$

$\therefore y = 150e^{0.122t}$

t = 0:1:15

A(t) = 50 exp(0.122 t)

B(t) = 150 exp(0.122 t)

t	A(t)	B(t)
0	50	150
1	56.488	169.463
2	63.817	191.452
3	72.098	216.293
4	81.453	244.358
5	92.022	276.065
6	103.962	311.885
7	117.451	352.354
8	132.691	398.073
9	149.908	449.725
10	169.359	508.078
11	191.334	574.003
12	216.161	648.483
13	244.209	732.626
14	275.896	827.687
15	311.694	935.083