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19/ENG04/062

$y = y_0 e^{kt}$

$y = 3y_0 \quad \therefore \frac{y}{y_0} = 3$

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

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

A. $y_0 = 50$ ——— (1)

B. $y_0 = 150$ ——— (2)

$y = 50 e^{kt}$ ——— (3)

$3 = e^{kt}$ ——— (4)

$\ln 3 = kt$

$\ln 3 = 9k$

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

$k = 0.122$

$9 = e^{kt}$

$\ln 9 = 18k$

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

$\therefore k = 0.122$

$y = 50e^{0.122t}$

$y = 150e^{0.122t}$

$$f(t) = 50 \cdot \exp(0.122 \cdot t)$$

$$g(t) = 150 \cdot \exp(0.122 \cdot t)$$

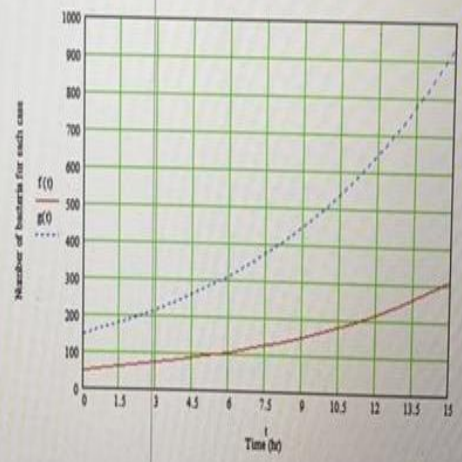
t > 0, 1, 15

f(t) =

50
56.488
63.817
72.098
81.453
92.022
103.962
117.451
132.691
149.908
169.359
191.334
216.161
244.209
275.896
311.694

g(t) =

150
169.483
191.452
216.293
244.358
276.065
311.885
352.354
398.073
449.725
508.078
574.003
648.483
732.626
827.687
935.083



where : g(t) = Number of bacteria for case B
 f(t) = Number of bacteria for Case A

Matrix

- $\begin{bmatrix} x & y \\ z & w \end{bmatrix}$
- x^n
- x^y
- $\frac{x}{y}$
- $x \cdot y$
- $x - y$
- $x + y$

Evaluate

- $=$
- $:=$
- \rightarrow
- \leftrightarrow
- $f(x)$
- x^y
- $x^f(y)$

Math

- $\frac{1}{x}$
- $\frac{1}{x^y}$
- $\frac{1}{x^y z}$