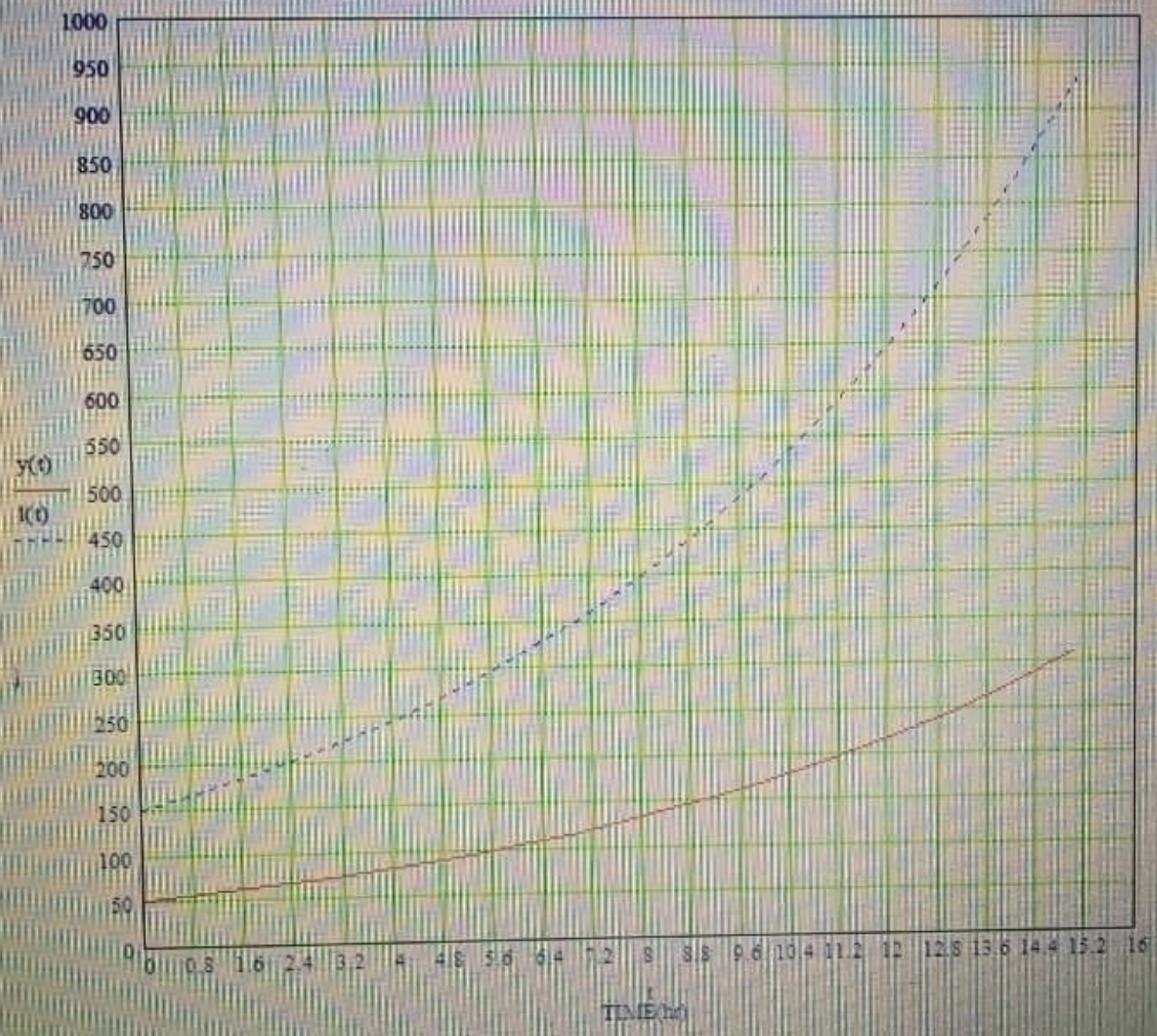


NUMBER OF BACTERIA OF CASE A



Math

$x = \int \frac{1}{x} dx$

$\alpha\beta$

Calculator

$n!$ i $m.n$ x_n \times

\ln e^x x^{-1} x^y $\sqrt[n]{\quad}$

\log π (\quad) \times^2 $\sqrt{\quad}$

\tan 7 8 9 $/$

\cos 4 5 6 \times

\sin 1 2 3 $+$

$=$ $.$ 0 $-$ $=$

Graph

18/ENG 03/026
Civil Engineering
Ekoju-Obe Philip

$$y = y_0 e^{kT} \rightarrow \text{from radioactivity}$$
$$\frac{y}{y_0} = e^{kT}$$

$$\frac{y}{y_0} = e^{kT} = 3 \text{ at } t = 9 \quad \text{--- (1)}$$
$$\frac{y}{y_0} = e^{kT} = 9 \text{ at } t = 18 \quad \text{--- (2)}$$

\therefore in A

$$y_0 = 50$$

$$y = 50e^{kT}$$

From eqn (1)

$$3 = e^{kT} \text{ at } t = 9$$

$$\ln 3 = kT$$

$$k = \frac{\ln 3}{T} = \frac{\ln 3}{9} = 0.122$$

\therefore in B

$$y_0 = 150$$

$$y = 150e^{kT}$$

From eqn (2)

$$9 = e^{kT} \text{ at } t = 18$$

$$\ln 9 = kT$$

$$k = \frac{\ln 9}{T} = \frac{\ln 9}{18} = 0.122$$

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

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

t = 0.1..15

t =

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$$E(t) = 50 \cdot e^{(0.122 \cdot t)}$$

E(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

$$P(t) = 150 \cdot e^{(0.122 \cdot t)}$$

P(t) =

150
169.463
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