

File Edit View Insert Format Math Symbolics Window Help
 Variables Times New Roman 10 B I U

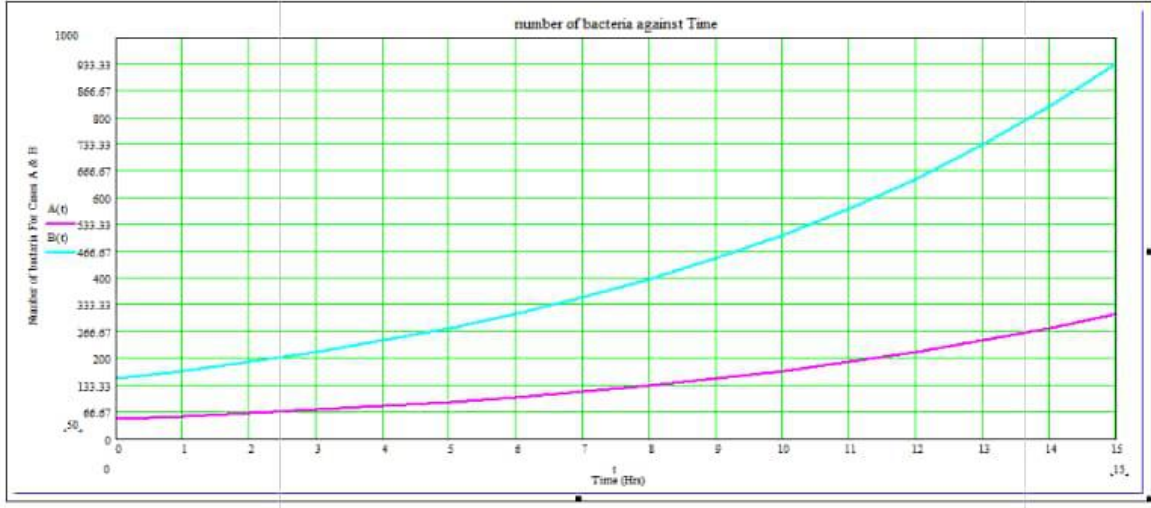
$A(t) := 50 \exp(0.122t)$ $B(t) := 150 \exp(0.122t)$
 $t := 0, 1..15$

A(t) =

50
56.488
63.817
72.098
81.453
92.022
103.952
117.451
132.691
149.908
169.350
191.334
216.151
244.209
276.896
311.694

B(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



ABIOHE FOLAWINDO ABNUL-AZEEM
CIVIL ENGINEERING
ENG 282 ASSIGNMENT 4
18/ENG05/002

$$y = y_0 e^{kt}$$
$$y = 3y_0; \frac{y}{y_0} = 3$$

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

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

A $y_0 = 50$ ----- (i)

B $y_0 = 150$ ----- (ii)

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

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

A -----
 $3 = e^{kt}$

$$\ln 3 = kt$$

$$\ln 3 = 9k$$

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

$$k = 0.122$$

$$9 = e^{kt}$$

$$\ln 9 = 18k$$

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

$$k = 0.122$$

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

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