MATRIC NO: 18/ENG07/007 DEPT : PETROLEUM ENG.
NAME : Ime Udo Udeme-F

Answers

$$y = y_0 e^{kt}$$

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

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

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

A $\quad y_0 = 50$ — (1)

B $\quad y_0 = 150$ — (2)

$\therefore \quad y = 50e^{kt}$ — (3)

$y = 150e^{kt}$ — (4)

A

$$3 = e^{kt}$$
$$\ln 3 = kt$$
$$\frac{\ln 3}{9} = \frac{9k}{9}$$
$$k = 0.122$$

B

$$9 = e^{kt}$$
$$\ln 9 = kt$$
$$\frac{\ln 9}{18} = \frac{18k}{18}$$
$$k = 0.122$$

$\therefore \quad y = 50e^{0.122t}$ — (A)

$\therefore \quad y = 150e^{0.122t}$ — (B)

$t := 0, 1 .. 15$

$A(t) := 50 \cdot \exp(0.122 \cdot t)$

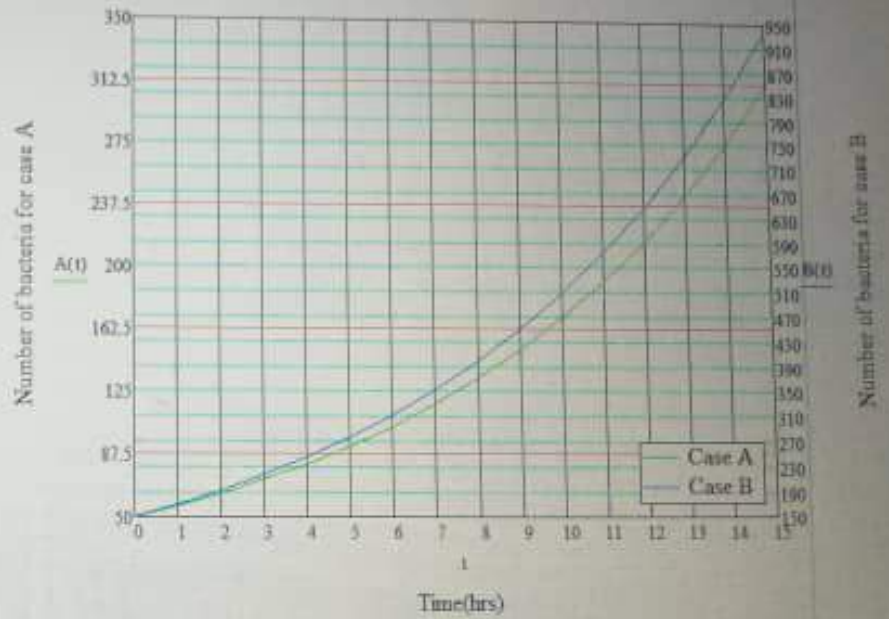
$B(t) := 150 \cdot \exp(0.122 \cdot t)$

$A(t) =$

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

$B(t) =$

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



Numbers of bacteria versus time

Press F1 for help.