

t = 0.1...15

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

$BO =$

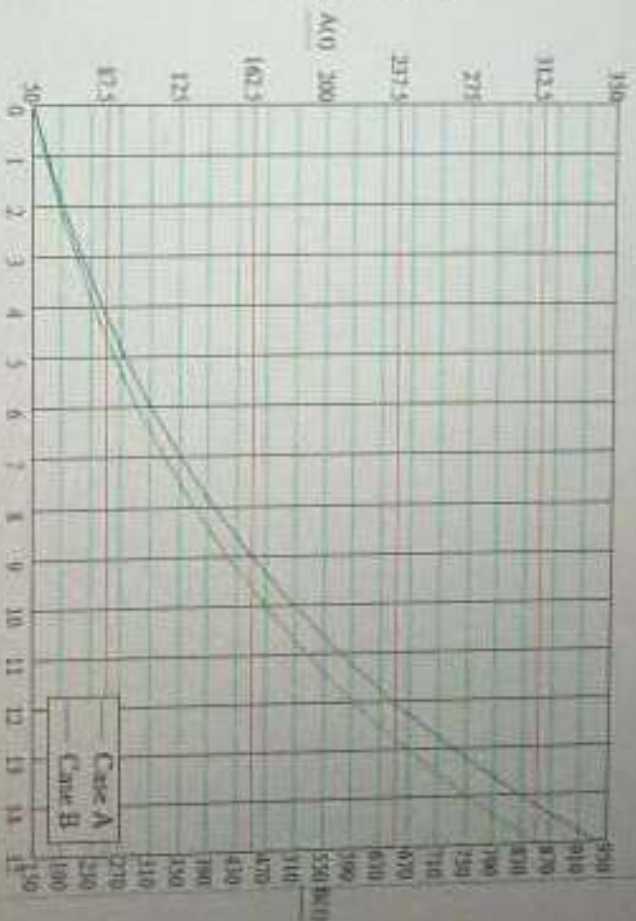
50
56.488
63.817
72.090
81.453
92.022
103.962
117.491
132.601
149.908
169.359
191.334
216.161
244.209
275.896
311.694

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

$BO =$

150
169.461
191.452
216.293
244.358
276.005
311.685
352.354
398.873
449.725
508.078
574.003
648.483
732.626
827.687
935.083

Number of bacteria for case A



Numbers of bacteria versus time

Number of bacteria for case B

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

$$y = 3y_0 \quad \text{at } t = 9$$

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

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

$$\therefore A \quad y_0 = 50 \dots \textcircled{1}$$

$$B = y_0 = 150 \dots \textcircled{2}$$

$$\therefore y = 50e^{kt}$$

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

$$\ln 3 = kt$$

$$\ln 9 = 9k$$

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

$$k = 0.122$$

$$9 = e^{kt}$$

$$\ln 9 = 18k$$

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

$$k = 0.122$$

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

$$122t$$