

ENG 282

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18/ENG103/009

CIVIL ENGR.

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

$$y = 3y_0, \quad y/y_0 = 3$$

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

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

$$\therefore A \quad y_0 = 50$$

$$y_0 = 150$$

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

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

$$A \quad \therefore 3e^{kt}$$

$$\ln 3 = kt$$

$$\ln 3 = 9k$$

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

$$k = 0.122$$

$$9 = e^{kt}$$

$$\ln 9 = 18k$$

$$\ln 9/18 = k$$

$$k = 0.122$$

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

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

$$k = 0.1115$$

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

A(t) =

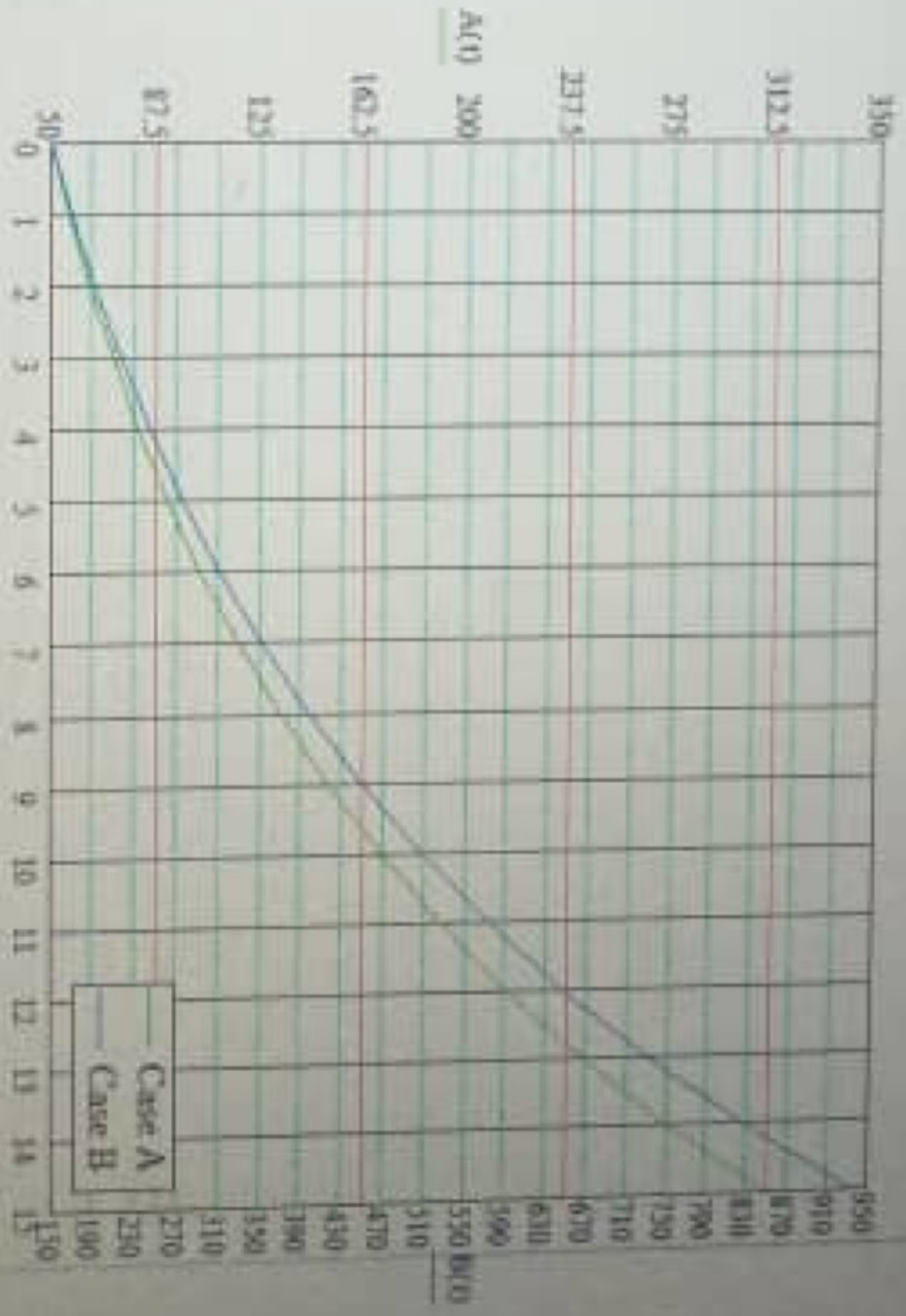
50
56.488
63.817
72.098
81.453
92.022
103.962
117.451
132.691
149.908
169.359
191.334
216.161
244.209
275.896
311.694

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

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

Number of bacteria for case A



Number of bacteria for case B

Numbers of bacteria versus time

Press F1 for help

AUTOSAVE

VIEW & PRINT