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DEPT: 18/ ENGO1/O14

DEPT: CHEMICAL ENGINEERING

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

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

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

$$\frac{y}{y_0} = e^{kt} = 9 \text{ at } t=15$$

$$\therefore y_0 = 50 \quad \dots (i)$$

$$y_0 = 150 \quad \dots (ii)$$

$$y = 50 e^{kt} \quad \dots (iii)$$

$$y = 150 e^{kt} \quad \dots (iv)$$

$$3 = e^{kt} \quad t=9$$

$$\ln 3 = kt$$

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

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

$$\therefore y = 50 e^{0.122t} \quad \dots (v)$$

$$y = 150 e^{0.122t} \quad \dots (vi)$$

Normal

Arial

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**B I U**

$$Y_1(t) := 50e^{0.122t}$$

$$Y_2(t) := 150e^{0.122t}$$

