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Assignment

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

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

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

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

$$\therefore y_0 = 50 \dots i$$

$$y_0 = 150 \dots ii$$

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

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

$$\ln 3 = kt$$

$$\ln 3 = 9k$$

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

$$k = 0.122$$

$$9 = e^{kt}$$

$$\ln 9 = 18k$$

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

$$k = 0.122$$

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

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