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COMPUTER ENGINEERING

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ENG 282

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

So

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

So

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

So

$$\hookrightarrow y_0 = 50 \quad \text{--- i}$$

$$y_0 = 150 \quad \text{--- ii}$$

$$\therefore y = 50e^{kt} \quad \text{--- iii}$$

$$y = 150e^{kt} \quad \text{--- iv}$$

$$\therefore 3 = e^{kt}$$

$$\ln 3 = \ln e^{k(9)}$$

$$\ln 3 = k(9)$$

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

$$k = 0.122$$

$$\hookrightarrow y = 50e^{0.122t} \quad \text{--- A}$$

$$y = 150e^{0.122t} \quad \text{--- B}$$

$$9 = e^{kt}$$

$$\ln 9 = \ln e^{k(18)}$$

$$\ln 9 = k(18)$$

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

$$k = 0.122$$

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

$$g(t) = 150e^{0.122t}$$

+

$$t = 0, 0.1 \dots 15$$

