



Normal

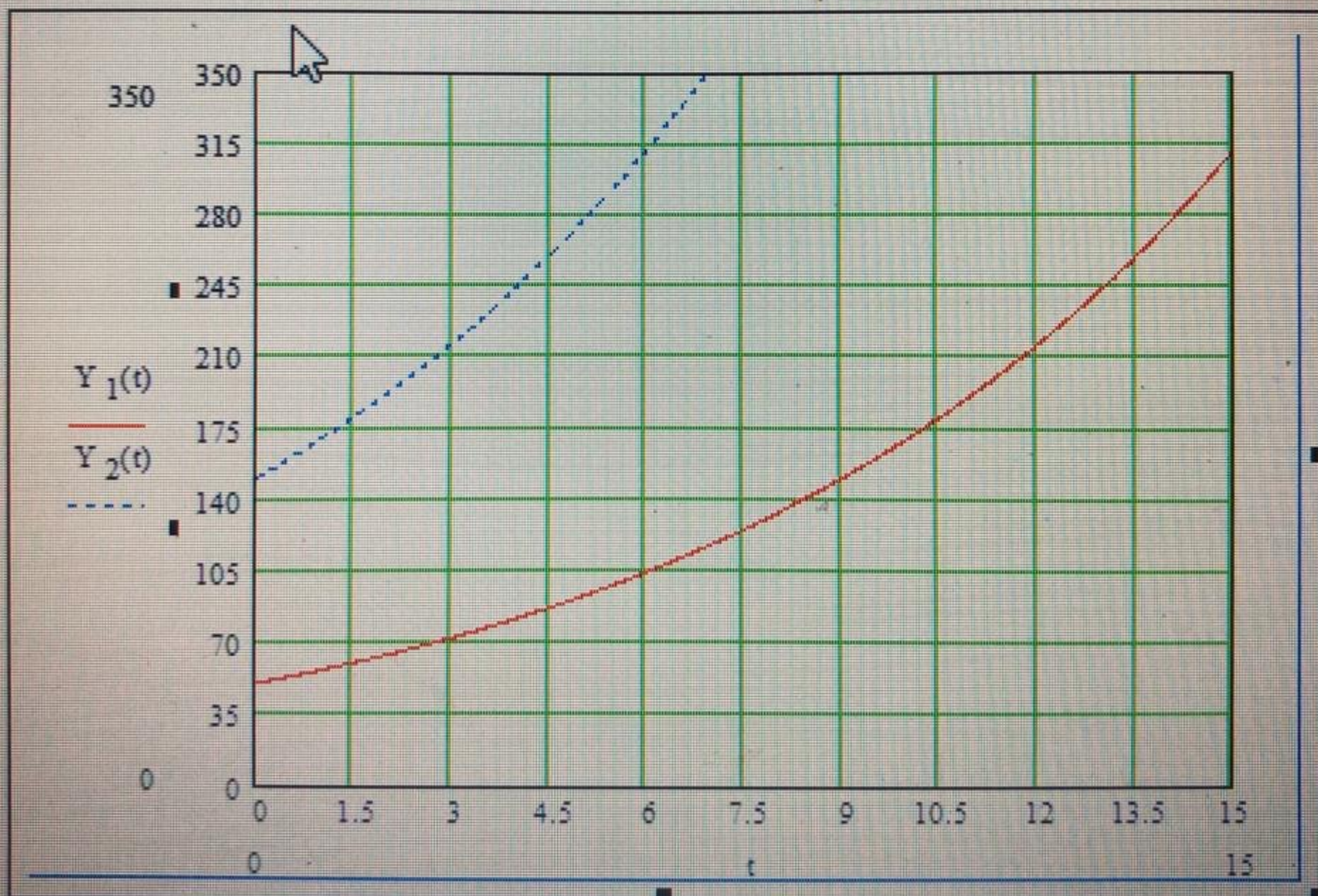
Arial

10

B *I* U

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

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



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

$$y = e^{kt}$$

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

$$y = 9 \text{ at } t = 18$$

$$y_0 = 50 - 9$$

$$y_0 = 150 - 6$$

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

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

$$\therefore 3 = e^{k \cdot 9}$$

$$\ln 3 = \ln e^{k \cdot 9}$$

$$\ln 3 = 9k$$

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

$$9 = e^{k \cdot 18}$$

$$\ln 9 = \ln e^{k \cdot 18}$$

$$\ln 9 = 18k$$

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

$$k = 0.122$$

$$y = 50 e^{0.122t} - 1$$

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