

$$\textcircled{9} \quad y' = \textcircled{3}y \quad \swarrow k$$

$$y(2) = 4$$

$$y = y_0 \cdot e^{3t}$$

$$4 = y_0 \cdot e^6$$

$$y_0 = \frac{4}{e^6} = 4e^{-6}$$

$$y' = ky$$

$$\begin{aligned} y &= 4e^{-6} \cdot e^{3t} \\ &= 4e^{3t-6} \end{aligned}$$

(115) $P = 2 \cdot e^{0.06t}$
Calculate tripling time?

$$3P = P e^{kt}$$

$$3 = e^{kt}$$

$$\ln 3 = kt$$

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

$$\frac{\ln 2}{k}$$

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

(19)

29,700

32,400

$$\frac{C^{14}}{C^{12}} = 10^{-12}$$

$$10^{-12} e^{-0.000121 (29,700)}$$

$$10^{-12} e^{-0.000121 (32,400)}$$

(15) $y \uparrow$ where $\frac{dy}{dx} > 0$

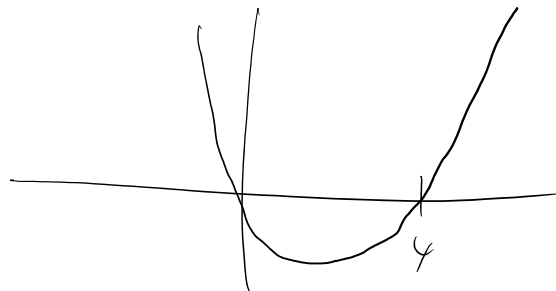
$$\frac{dy}{dx} = \underbrace{9'(x^3 - 6x^2)}_{> 0} \cdot (3x^2 - 12x)$$

$$3x^2 - 12x = 0$$

$$3x(x - 4) = 0$$

$$x = 0, 4$$

(A)



(16)

$$\frac{|2.9 - 3|}{2.9 - 3} = \frac{0.1}{-0.1} = -1$$

(B)