№16. $\begin{cases} x = \dfrac{1+\ln t}{t^2} \\ y = \dfrac{3+2\ln t}{t} \end{cases}$ $\quad t_0 = \dfrac{1}{e}$

$$y_x' = \frac{y_t'}{x_t'} = \frac{\left(\frac{3+2\ln t}{t}\right)'}{\left(\frac{1+\ln t}{t^2}\right)'} = t \quad ; \quad x\left(\frac{1}{e}\right) = 0 \ ; \ y\left(\frac{1}{e}\right) = e$$

$$y_x'(0) = \frac{1}{e}$$

$$y - y(x_0) = y'(x_0)(x - x_0)$$

$$y - e = \frac{1}{e}(x - 0)$$

$\underline{y = \frac{x}{e} + e}$ — ур-е касательной

$$y - y(x_0) = -\frac{1}{y'(x_0)}(x - x_0)$$

$$y - e = -e(x - 0)$$

$\underline{y = -ex + e}$ — ур-е нормали

$$y''_{xx} = \frac{(y'_x)'_t}{x'_t} = \frac{t'}{\left(\frac{1+\ln t}{t^2}\right)'} = \frac{1}{-\frac{2\ln t+1}{t^3}} = -\frac{t^3}{2\ln t+1} = -\frac{\frac{1}{e^3}}{-2+1} =$$

$$= \frac{1}{e^3}$$