$$y^2=(1-x)^3$$

$$y=1+3x$$

$$C_1' e^x + C_2' e^{6x} = 0$$

$$C_1' e^x + 6C_2' e^{6x} = 3e^x + 14xe^{-x}$$

$$\Delta = \begin{vmatrix} e^x & e^{6x} \\ e^x & 6e^{6x} \end{vmatrix} = 6e^x e^{6x} - e^x e^{6x} = 5e^x e^{6x} = 5e^{7x}$$

$$\Delta_1 = \begin{vmatrix} 0 & e^{6x} \\ 3e^x+14xe^{-x} & 6e^{6x} \end{vmatrix} = -3e^{7x} - 14xe^{5x}$$

$$\Delta_2 = \begin{vmatrix} e^x & 0 \\ e^x & 3e^x+14xe^{-x} \end{vmatrix} = 3e^{2x}+14x$$

$$C_1' = \frac{\Delta_1}{\Delta} = \frac{-3e^{7x}-14xe^{5x}}{5e^{7x}} = -\frac{3}{5} - \frac{14}{5}xe^{-2x}$$

$$C_2' = \frac{\Delta_2}{\Delta} = \frac{3e^{2x}+14x}{5e^{7x}} = \frac{3}{5}e^{-5x} + \frac{14}{5}xe^{-7x}$$

$$C_1 = \int \left(-\frac{3}{5} - \frac{14}{5}xe^{-2x}\right)dx = -\frac{3}{5}x -$$

$$2t^2-3t-2=$$

$$=2t^2-\underbrace{2\cdot\sqrt{2}}\cdot\frac{1}{\sqrt{2}}\cdot 3t-2=$$

$$=2t^2-2\sqrt{2}\,\frac{1}{\sqrt{2}}\cdot\frac{3}{2}t+\left(\frac{3}{2\sqrt{2}}\right)^2-\frac{13}{2}=$$

$$=\left(\sqrt{2}t-\frac{3}{2\sqrt{2}}\right)^2-\frac{25}{8}$$

$$=\int\frac{dt}{\frac{25}{8}-\left(\sqrt{2}t-\frac{3}{2\sqrt{2}}\right)^2}=\frac{1}{\sqrt{2}}\int\frac{d\left(\sqrt{2}t-\frac{3}{2\sqrt{2}}\right)}{\frac{25}{8}-\left(\sqrt{2}t-\frac{3}{2\sqrt{2}}\right)^2}=$$

$$=\frac{1}{\sqrt{2}}\int\frac{du}{\frac{25}{8}-u^2}=-\frac{1}{\sqrt{2}}\int\frac{du}{u^2-\frac{25}{8}}=$$

$$=-\frac{1}{\sqrt{2}}\,\frac{1}{2\sqrt{\frac{25}{8}}}\ln\left|\frac{u-\sqrt{\frac{25}{8}}}{u+\sqrt{\frac{25}{8}}}\right|+C=$$

$$=-\frac{1\cdot\cancel{\sqrt{2}}}{2\cancel{\sqrt{2}}\cdot\sqrt{13}}\ln\left|\frac{\sqrt{2}t-\frac{3}{\sqrt{2}}-\sqrt{\frac{13}{2}}}{\sqrt{2}t-\frac{3}{\sqrt{2}}+\sqrt{\frac{13}{2}}}\right|+C=$$

$$=-\frac{1}{2\sqrt{13}}$$

$$\frac{1}{5}\ln\left|\frac{2x+1}{2-x}\right|+C$$

$$\frac{1}{5}-\frac{1}{5}\ln 2-\frac{1}{5}\ln\left|\frac{t-2}{}\right.$$

$b(x) = 3e^x$

$\alpha = 1,\ \beta = 0,\ P_0(x) = 3,\ Q_0(x) = 0,\ m = 0$

$\lambda = 1$ – корень хар. ур. $\Rightarrow k = 1$

$y_{чн1} = xe^x$

$y_{чн1}' =$