Модели на реални процеси Курсова работа 2 – ЛДУ,СЛДУ

Спец. "Информатика", 2021/2022

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МОДЕЛИ НА РЕАЛНИ ПРОЦЕСИ КУРСОВА РАБОТА 2 – ЛДУ, СЛДУ

спец. Информатика, 2021/2022

Да се реши по един пример от всяка задача.

Задача 1.

a)
$$y'' - 6y' + 8y = 0$$

$$6) y''' - 2y'' + y' = 0$$

B)
$$y''' + 6y'' + 12y' + 8y = 0$$

r)
$$y^{IV} - 5y'' + 4y = 0$$
.

Задача 2.

a)
$$y'' - 2y' + 10y = 0$$

6)
$$y'' - 4y' + 8y = 0$$

B)
$$y''' - y'' + y' - y = 0$$

r)
$$y^{IV} + 8y'' + 16y = 0$$
.

Задача 3.

a)
$$y'' - 3y' + 2y = \frac{e^x}{1 + e^x}$$

$$6) \ y'' + 2y' + y = \frac{1}{xe^x}$$

B)
$$y'' + 2y' + 5y = e^{-x} \operatorname{tg} x$$

$$r) \ y'' + 2y' + 2y = \frac{e^{-x}}{\cos x}.$$

Задача 4.

a)
$$y'' + 3y' - 4y = xe^{-x}$$

6)
$$y'' - 4y' + 4y = 2e^{2x}$$

$$\mathbf{B}) \ y'' + y = x \cos x$$

r)
$$y'' - 4y' + 13y = -9\cos 2x$$
.

Задача 5.

a)
$$\begin{vmatrix} \dot{x} = 2x + y \\ \dot{y} = 3x + 4y \end{vmatrix}$$

$$6) \quad \begin{vmatrix} \dot{x} = -5x - 6y \\ \dot{y} = 8x + 9y \end{vmatrix}$$

$$\begin{array}{c|c} \mathbf{B} \end{pmatrix} \ \dot{x} = -5x - 4y \\ \dot{y} = 10x + 7y \end{array}$$

r)
$$\begin{vmatrix} \dot{x} = 6x + y \\ \dot{y} = -16x - 2y. \end{vmatrix}$$

Задача 6.

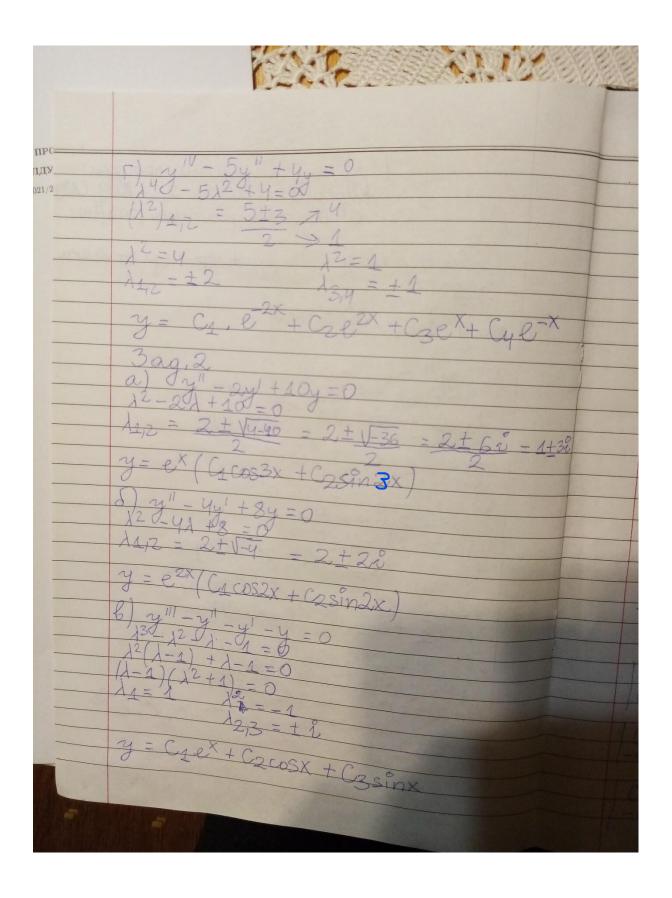
a)
$$\begin{vmatrix} \dot{x} = -3x + y \\ \dot{y} = -4x + y + \frac{1}{te^t} \end{vmatrix}$$

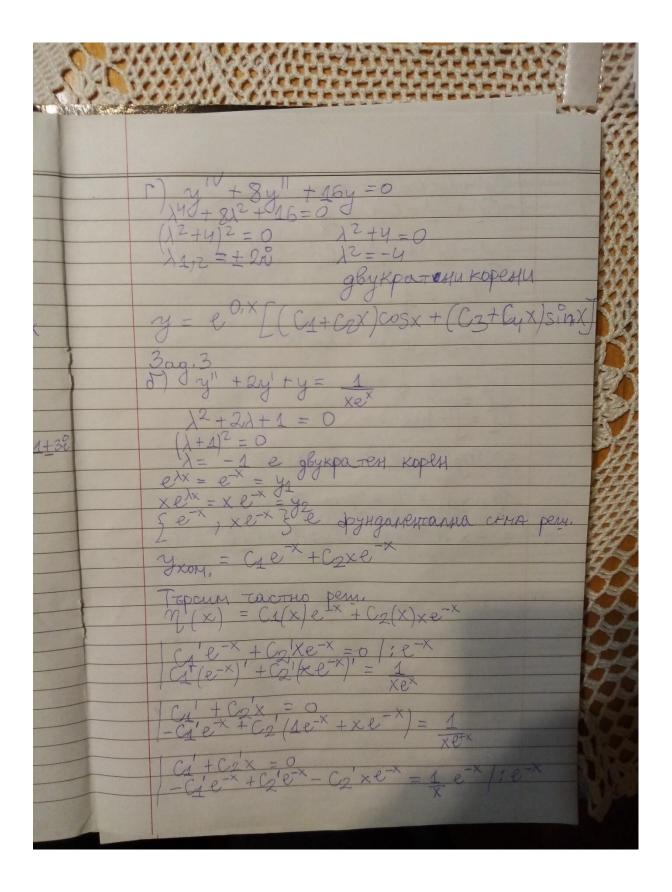
6)
$$\begin{vmatrix} \dot{x} = 3x + y \\ \dot{y} = -4x - y + \frac{e^t}{2\sqrt{t}}. \end{vmatrix}$$

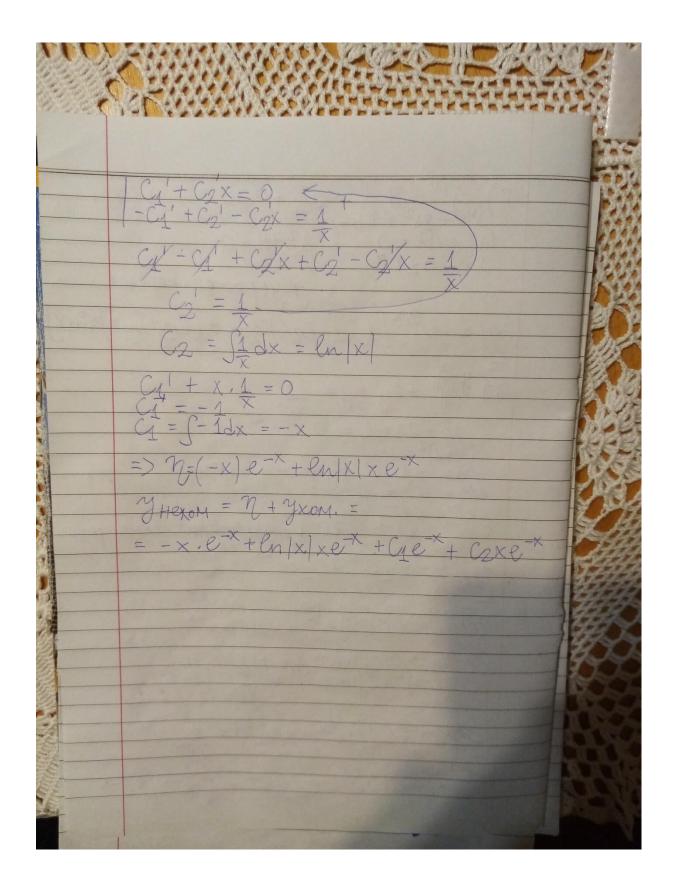
$$\begin{array}{c|c} \mathbf{B} \end{pmatrix} \ \ \dot{x} = -2x - y + 37\sin t \\ \dot{y} = -4x - 5y \end{array}$$

r)
$$\begin{vmatrix} \dot{x} = 3x - 5y - 2e^t \\ \dot{y} = x - y - e^t \end{vmatrix}$$

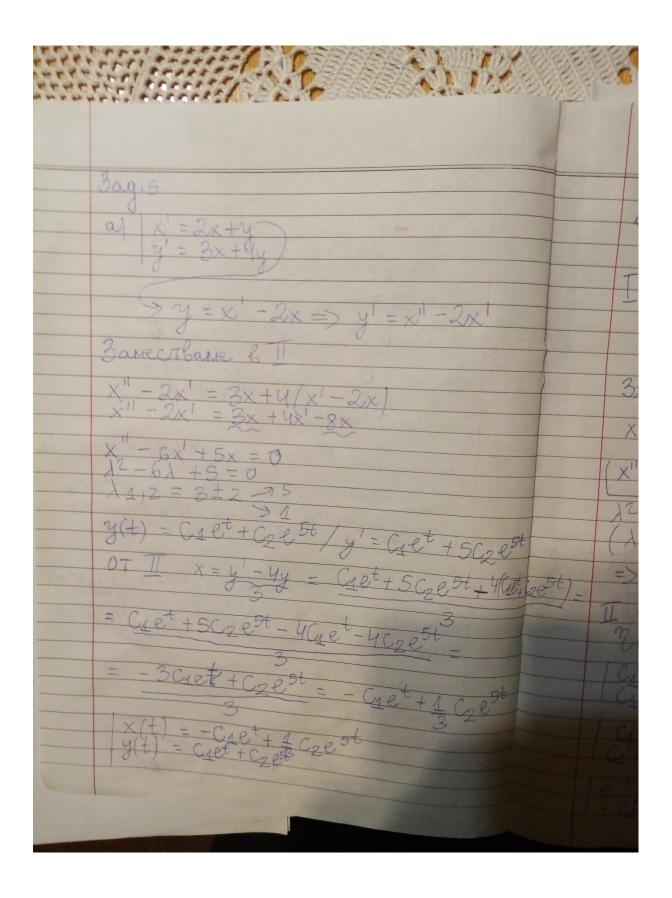
реалии процем Ha 124 Busko a 8 = 0 3±19-8 12 = 2 boen KOPEN $\frac{111 + 6x^{11} + 12x^{11}}{6x^{2} + 12x^{2}}$ + C2 x, e - 2x + C3x2, PZX







A DE LOS Jan. 4 +44 +44 = 2e2x /x 12 - 4) 19-08 exx2 m = a (x 2 x 2 + a 2 x 2 x -(2ae2x X7 +40x2-2 THEXOM. = YXOM, + 7 = C12 +C



CONTRACTOR OF THE PROPERTY HEXON, C-MO Banecibane & I 3x' + x'' = -4x + 3x + x' + 1e clet + (20) - Colog

