

Matematika A1 - email 13.3.2012

1. Kinematik komie 2. taber o kintabul'ui kefienty:

$$y'' - 2y' - 3y = 0, \quad y(0) = 1, \quad y'(0) = -2;$$

$$y'' - 2y' - 3y = f(x), \quad \text{Kode } f(x) = x^2 + 1; e^{-2x}; x e^{-x}; \cos 3x; e^{-x} \cos 3x;$$

$$a \quad y(0) = 0, \quad y'(0) = 1;$$

$$y'' + 4y' + 3y = f(x), \quad \text{Kode } f(x) = 8x e^x; \cos x - 4 \sin x;$$

$$x'' + 4x = 0, \quad x(0) = \sqrt{3}, \quad x'(0) = 2;$$

$$y'' + 4y' = \cos 2x - 2 \sin 2x \quad (\text{Konek' rost'ui})$$

$$y'' - 2y' + 5y = e^x \sin 2x \quad (\text{Konek' rost'ui})$$

$$y'' - y' - 2y = -4x \quad (\text{Konek' rost'ui' otlobov i variaci' konstant})$$

$$y'' - y' = f(x), \quad \text{Kode } f(x) = 8 \sin 2x; e^x \sin x; e^{2x} (\cos x + \sin x);$$

Dal: $\ddot{x} + 2\lambda \dot{x} + \omega^2 x = \sin \Omega t, \quad (\omega, \Omega > 0, \lambda \geq 0)$
 $x(0) = x_0, \quad \dot{x}(0) = v_0$

2. Swatantrya lineardushk ponis o koshchakubulani koshchienty.

$$\begin{aligned} x_1' &= x - y & x_1(0) &= 1, & y_1(0) &= 2; \\ y_1' &= -4x + y & & & & \end{aligned}$$

$$\begin{aligned} x_2' &= 2x_1 + x_2 & x_2(0) &= 0, & x_3(0) &= 2; \\ x_3' &= 3x_1 + 4y_2 & & & & \end{aligned}$$

$$\begin{aligned} y_2' &= x_1 - 2x_2 & x_1(0) &= 1, & x_2(0) &= -2; \\ x_2' &= x_1 + 4x_2 & & & & \end{aligned}$$

$$\begin{aligned} x_4' &= -x_1 + 2x_2 & y_4(0) &= -1, & x_2(0) &= -2; \\ x_2' &= x_4 & & & & \end{aligned}$$

$$x_1' = -3x_1 + 4x_2 - 2x_3 \quad x_1(0) = 2, \quad x_2(0) = 0, \quad x_3(0) = -3$$

$$x_2' = x_4 + x_3$$

$$x_3' = 6x_1 - 6x_2 + 5x_3$$

$$x_4' = -x_1 + 2x_2 + t$$

$$x_2' = x_4 - 1$$

shem' ushu'
(pauice koshant)