

Линейни уравнения 2

В следващите задачи решете уравненията

$$1) t^2 \ddot{x} - 2x = \sin(\ln t).$$

$$2) t^2 \ddot{x} - t\dot{x} = -t + \frac{2}{t-1}.$$

$$3) (t-2)^2 \ddot{x} - 3(t-2)\dot{x} + 4x = t.$$

$$4) t\ddot{x} - (2t+1)\dot{x} + (t+1)x = 0 \quad x_1 = e^t.$$

$$5) \ddot{x} - 2(1 + \tan^2 t)x = 0 \quad x_1 = \tan t.$$

$$6) \ddot{x} + \frac{2}{t}\dot{x} + x = 0.$$

$$7) t\ddot{x} - 2(t-1)\dot{x} + (t-2)x = \frac{e^t}{t^2}.$$

$$8) t(2t+1)\ddot{x} + (2t-1)\dot{x} - 2x = t^2 + t.$$