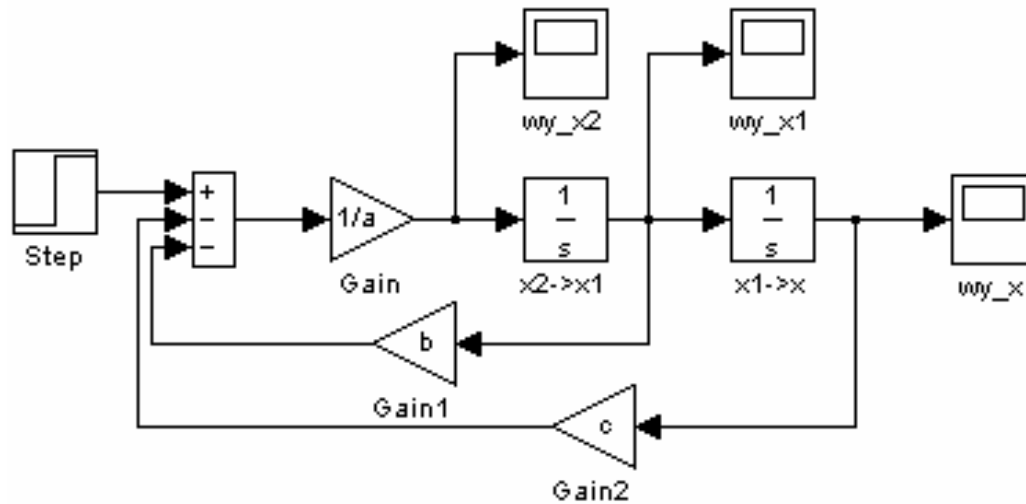


## Schemat równania różniczkowego

$$a\ddot{x} + b\dot{x} + cx = u \quad \Rightarrow \quad \ddot{x} = \frac{1}{a}(u - b\dot{x} - cx) \quad x = u/c$$



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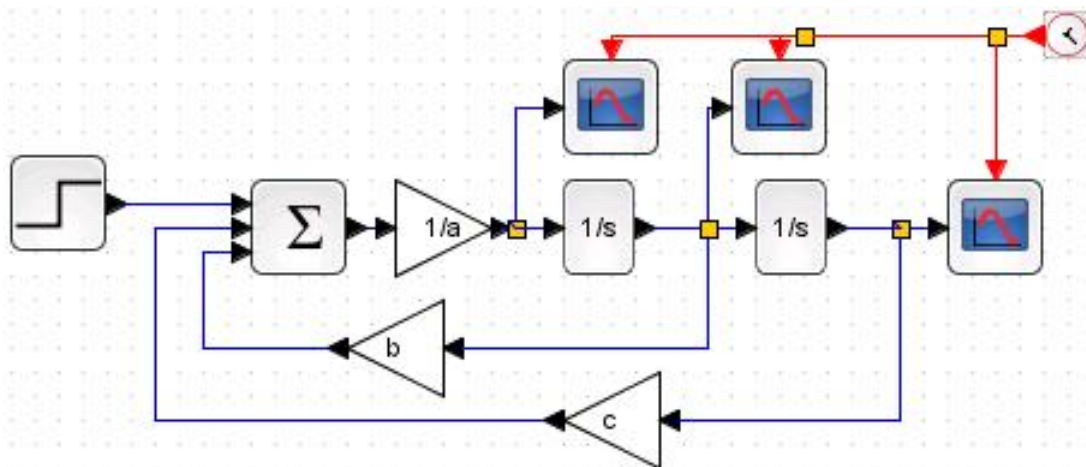

$$a = 2; b = 8; c = 1;$$

$$u_0 = 2;$$

$$x_0 = u_0/c; \quad x_{10} = 0;$$

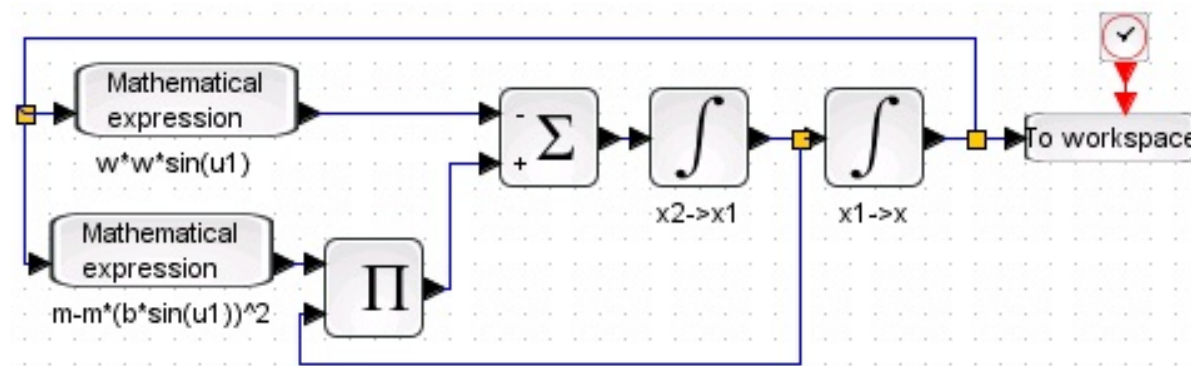
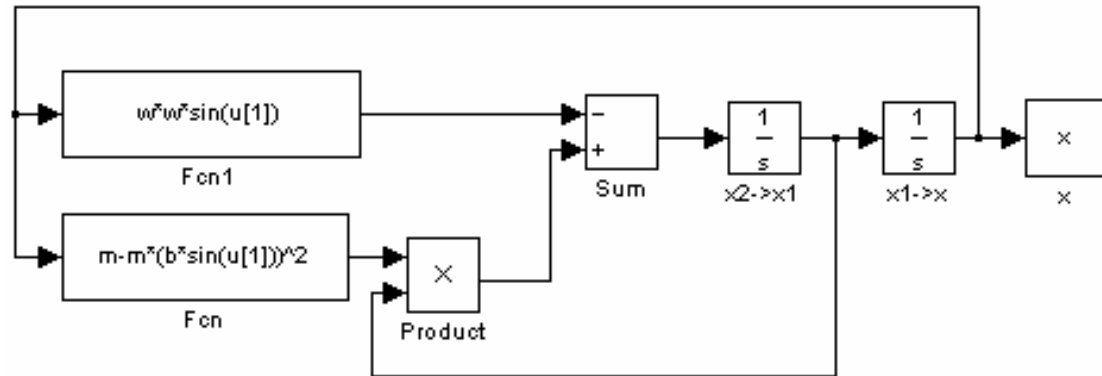

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$$du = 1;$$



# Schemat równania różniczkowego nieliniowego

$$\ddot{x} - m(1 - b^2 \sin^2 x)\dot{x} + w^2 \sin x = 0 \quad \Rightarrow \quad \ddot{x} = m(1 - b^2 \sin^2 x)\dot{x} - w^2 \sin x$$



## Schemat równania różniczkowego nieliniowego

$$\begin{cases} \dot{x}_1 - m(1 - b^2 x_2^2) x_1 = 0 \\ \dot{x}_2 + x_1 + x_2 = 0 \end{cases} \Rightarrow \begin{cases} \dot{x}_1 = m(1 - b^2 x_2^2) x_1 \\ \dot{x}_2 = -x_1 - x_2 \end{cases}$$

