Modeling with Systems

ODE Architect cannot work with 2nd order differential equations directly. You must convert the 2nd order differential equation to a system of 1st order differential equations. To view the solutions of

$$x'' + \frac{1}{2}x' + 5x = 0$$

you enter the system,
x'=y
y'=−5*x−(1/2)*y

Let $t = 0$, $x = 2$, $y = 1$ be our initial conditions. Click on the x-y tab to see the solution curve in the **phase plane**. The tabs t-x , t-y give the **component graphs** of $x(t)$ and $y(t)$. The 3D tab gives a representation of the solution in txy-space.