

MA 226 Worksheet
Second order equations (1)

Find the general solution to the following second order linear differential equations:

- 1.) $y'' + 12y' + 2y = 0$
- 2.) $-3y'' + 4y' + 7y = 0$
- 3.) $y'' - y' - \pi y = 0$
- 4.) $\frac{1}{4}y'' + \pi y' + e^2 y = 0$
- 5.) $y'' + \sqrt{17}y' + 4y = 0$

Find the solutions to the following initial value problems and graph their solutions:

- 6.) $y'' + 12y' + 32y = 0, y(0) = 1, y'(0) = 0.$
- 7.) $y'' - y' - 2y = 0, y(0) = 0, y'(0) = 4.$
- 8.) $y'' + 15y' + 4y = 0, y(1) = 3, y'(1) = 0.$
- 9.) $y'' + 12y' + 35y = 0, y(-1) = 1, y'(-1) = -1.$