

MA 226 Worksheet
Second order equations (2)

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

1.) $y'' - 2y' + 2y = 0$

2.) $y'' + 6y' + 13y = 0$

3.) $y'' + 2y' + \frac{5}{4}y = 0$

4.) $y'' + y' + \frac{5}{4}y = 0$

5.) $4y'' + 9y = 0$

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

6.) $y'' + 4y = 0$, $y(0) = 0$, $y'(0) = 1$.

7.) $y'' + 4y' + 5y = 0$, $y(0) = 1$, $y'(0) = 0$.

8.) $y'' - 2y' + 5y = 0$, $y(\frac{\pi}{2}) = 0$, $y'(\frac{\pi}{2}) = 2$.

9.) $y'' + y' + \frac{5}{4}y = 0$, $y(0) = 3$, $y'(0) = 1$.