

Sections: 4.2,4.3

1. Find general solutions for the following.

(a) $y'' - y' - 6y = 0$

(f) $x'' = 0$

(b) $y'' - 4y' - 5y = 0$

(g) $2y'' - y' = 0$

(c) $y'' - 12y' + 36y = 0$

(h) $y' - 2y = 0$

(d) $2x'' - 3x' - 2x = 0$

(i) $4x'' + 12x' + 9x = 0$

(e) $4x'' - x = 0$

(j) $4x'' + 4x' + x = 0$

(k) $y''' - 3y'' + 2y' = 0$

(l) $x^{(iv)} - 5x'' + 4x = 0$

2. Solve the initial value problem .

$$(a) \quad y'' - y' - 2y = 0, \quad y(0) = 5, y'(0) = 4$$

$$(b) \quad x'' - 4x' + 4x = 0, \quad x(0) = x'(0) = 0$$

3. Find general solutions for the following.

$$(a) \quad y'' + 4y = 0$$

$$(b) \quad y'' + 4y' + 5y = 0$$

$$(c) \quad x'' - 6y' + 13y = 0$$

4. Solve the initial value problem .

$$(a) \quad y'' + 2y' + 2y = 0, \quad y(0) = 2, y'(0) = 0$$