

## 4.3 Homogeneous Linear Equations with Constant Coefficients (1)

Supplemental Instruction  
Iowa State University

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Course: Math 267

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1. Find the general solution of the given differential equations

a.  $y'' - y' - 6y = 0$

b.  $3y'' + y = 0$

2. Solve the given initial-value problem

a.  $y'' + y' + 2y = 0$ ,  $y(0) = y'(0) = 0$

b.  $\frac{d^2y}{dt^2} - 4\frac{dy}{dt} - 5y = 0$ ,  $y(1) = 0$ ,  $y'(1) = 2$

3. Solve the given boundary-value problem

a.  $y'' - 10y' + 25y = 0$ ,  $y(0) = 1$ ,  $y(1) = 0$

b.  $y'' + y = 0$ ,  $y'(0) = 0$ ,  $y'(\pi/2) = 0$