

## 4.4 Undetermined Coefficients

Supplemental Instruction  
Iowa State University

Leader: Kim C.

Course: Math 267

Instructor: Dr. D'Alessandro

Date: 9/18/17

---

1. Solve the given differential equations by undetermined coefficients.

a.  $y'' - y' + \frac{1}{4}y = 3 + e^{\frac{x}{2}}$

b.  $y'' + 4y = 3\sin 2x$

c.  $y'' + 2y' + y = \sin x + 3\cos 2x$

d.  $y''' - 3y'' + 3y' - y = x - 4e^x$

2. Solve the given initial value problems

e.  $2y'' + 3y' - 2y = 14x^2 - 4x - 11$ ,  $y(0) = 0$ ,  $y'(0) = 0$

f.  $y'' + 4y' + 5y = 35e^{-4x}$ ,  $y(0) = -3$ ,  $y'(0) = 1$