

## Reading

Sections 3.5

1. Use the method of undetermined coefficients to find a particular solution to

(a)  $y'' - y' - 2y = -2t + 4t^2$

(b)  $y'' + 4y' + 4y = 2e^{-2t}$

(c)  $y'' + 2y' = 8 \sin(2t) + 24 \cos(2t)$

2. Solve

(a)

$$y'' - 4y' + 4y = 36e^{4t}$$

$$y(0) = 7, y'(0) = 7$$

(b)

$$y'' + 2y' + 5y = e^{-t} \cos(2t)$$

$$y(0) = 1, y'(0) = 1$$

Just find the form of the particular solution for this one, the algebra gets too messy to do by hand

3. Determine the form of the particular solution for

(a)  $y'' + 3y' + 2y = e^t(t^2 + 1) \sin(2t)$

(b)  $y'' + 6y' + 9y = (t + 1)e^{-3t} + (2t + 1)$