

WRITTEN HOMEWORK 6

MATH 46 SEC 030

This homework will be due on Thursday May 21st.

Question 1 Find the general solution of

$$y'' - 6y' + 10y = 0$$

Question 2 Given that $y = x^2$ is a solution of

$$x^2 y'' + xy' - 4y = 0,$$

find the general solution using reduction of order.

Question 3 Find the solution of the following initial value problem.

$$\begin{cases} y'' - 4y' + 5y = 0. \\ y(0) = 3. \\ y'(0) = 1 \end{cases}$$

Question 4 Find the general solution of

$$y'' - 5y' + 6y = e^{3x}$$

Question 5 Find the general solution of

$$y'' + y' + 2y = x^2 + 4$$

Question 6 Find the general solution of

$$y'' + y' = \sin x$$