Math 1b. Second-Order Homogeneous Differential Equations with Constant Coefficients (I)

Spring 2006

1. Find the general solution of the equation $y'' + 5y' + 6y = 0$

2. Find the general solution of the equation $2y'' - 3y' - 2y = 0$

3. Find the general solution of the equation $6y'' + 5y' - 6y = 0$

4. Solve the initial value problem

$$
\begin{aligned}
y'' - y' - 2y &= 0 \\
y(0) &= -1 \\
y'(0) &= 2
\end{aligned}
$$

5. Solve the initial value problem

$$
\begin{aligned}
10y'' - y' - 3y &= 0 \\
y(0) &= 1 \\
y'(0) &= 0
\end{aligned}
$$

6. Solve the initial value problem

$$
\begin{aligned}
y'' - 2y' - 3y &= 0 \\
y(0) &= 2 \\
y'(0) &= -3
\end{aligned}
$$