

1. Write the general solution for each equation.
 - a. $y'' + 14y' + 49y = 0$
 - b. $2y'' - 5y' - 3y = 0$

2. Find and simplify the Wronskian of the pair of functions:
 - a. $y_1 = \sin x$ and $y_2 = \cos x$
 - b. $y_1 = e^x \sin x$ and $y_2 = e^x \cos x$

3. Consider the equation $t^2 y'' - 2y = 0$ for $t > 0$.
 - a. Verify $y_1 = t^2$ and $y_2 = t^{-1}$
 - b. Explain why we know $y = C_1 t^2 + C_2 t^{-1}$ is the general solution.