Name_____

Section 5.2

General Solutions of Linear Equations

Let $y_1, y_2, ..., y_n$ be n solutions of the homogeneous linear equation

The n functions

Suppose

Prove linearly independent

$$f(x) = e^x, g(x) = x^2, h(x) = x^{-2} \ln x, x > 0$$

$$x^3 y^{(3)} + 6x^2 y'' + 4xy' - 4y = 0, \ y(1) = 1, \ y''(1) = -11$$

$$y_1 = x, \ y_2 = x^{-2}, \ y_3 = x^{-2} \ln x$$

$$y'' - 4y = 12; \ y(0) = 0; \ y'(0) = 10;$$

$$y_c = C_1 e^{2x} + C_2 e^{-2x}; \ y_p = -3$$