

## Problem 19

In each of Problems 13 through 20, verify that the given functions  $y_1$  and  $y_2$  satisfy the corresponding homogeneous equation; then find a particular solution of the given nonhomogeneous equation. In Problems 19 and 20,  $g$  is an arbitrary continuous function.

$$(1 - x)y'' + xy' - y = g(x), \quad 0 < x < 1; \quad y_1(x) = e^x, \quad y_2(x) = x$$