

## Problem 6

In each of Problems 1 through 14:

- (a) Seek power series solutions of the given differential equation about the given point  $x_0$ ; find the recurrence relation.
- (b) Find the first four terms in each of two solutions  $y_1$  and  $y_2$  (unless the series terminates sooner).
- (c) By evaluating the Wronskian  $W(y_1, y_2)(x_0)$ , show that  $y_1$  and  $y_2$  form a fundamental set of solutions.
- (d) If possible, find the general term in each solution.

$$(2 + x^2)y'' - xy' + 4y = 0, \quad x_0 = 0$$