

Problem 16

In each of Problems 15 through 18:

- (a) Find the first five nonzero terms in the solution of the given initial value problem.
- (b) Plot the four-term and the five-term approximations to the solution on the same axes.
- (c) From the plot in part (b) estimate the interval in which the four-term approximation is reasonably accurate.

$$(2 + x^2)y'' - xy' + 4y = 0, \quad y(0) = -1, \quad y'(0) = 3; \quad \text{see Problem 6}$$