

- 8.** Obtain numerical solution correct to two decimals for the initial value problem

$$y' = 3x + 4y, y(0) = 1, x \in [0, 0.2]$$

using the Taylor series method with $h = 0.1$.

- 9.** Obtain numerical solution correct to two decimals for the initial value problem

$$y' = 3x + y^2, y(1) = 1, x \in [1, 1.2]$$

using the Taylor series method with $h = 0.1$.

In the following problems, obtain the solution by Taylor series method.

- 10.** Find y at $x = 0.1$ if $y' = x^2y - 1, y(0) = 1$.

- 11.** Find $y(1.1)$ given that $y' = x + y, y(1) = 0$.

- 12.** Find the values y at $x = 0.1$ and $x = 0.2$, given

$$y' = x + y, y(0) = 1.$$

- 13.** Get the value of y at $x = h$, given

$$y' = x + y + xy, y(0) = 1.$$

Using the modified Euler method, solve the following initial value problems.

- 14.** Find $y(0.1)$ if $y' = x^2 + y^2, y(0) = 1$.

- 15.** Find $y(0.2)$, given the initial value problem $y' = y - x^2 + 1, y(0) = 0.5$.