



Topic: Euler's & Modified Euler's Method

1. Using Euler's method, find $y(0.1)$ given that $\frac{dy}{dx} = x + y$, $y(0) = 1$.
2. Using Euler's method, find $y(0.1)$ given that $\frac{dy}{dx} = \log(x + y)$, $y(0) = 2$ at $x = 0.2$ by assuming $h = 0.2$.
3. Using Euler's method, find $y(0.1)$ given that $\frac{dy}{dx} = y - x^2 + 1$, $y(0) = 0.5$ at $x = 0.2$ by assuming $h = 0.2$.
4. Find the values of y at $x = 0.1$ given that $\frac{dy}{dx} = x^2 - y$, $y(0) = 1$ by modified Euler's method.
5. Solve $(1 + x)\frac{dy}{dx} = -y^2$, $y(0) = 1$ by modified Euler's method by choosing $h = 0.1$, find $y(0.1)$ and $y(0.2)$.