You can use a calculator for this assignment

1. Use the **Euler method** to find an approximate value for $y(5)$ if $y(x)$ is the solution of the initial value problem ode

   \[ y' = x + y \quad , \quad y(1) = 0 \quad , \]

   using mesh-size $h = 1$.

2. Use the **Improved Euler method** to find an approximate value for $y(5)$ if $y(x)$ is the solution of the initial value problem ode

   \[ y' = x + y \quad , \quad y(1) = 0 \quad , \]

   using mesh-size $h = 1$.

3. Use the **Euler method** to find an approximate value for $y(1.1)$ if $y(x)$ is the solution of the initial value problem ode

   \[ y' = 4xy \quad , \quad y(1) = 1 \quad , \]

   using mesh-size $h = 0.05$.

4. Use the **Improved Euler method** to find an approximate value for $y(1.1)$ if $y(x)$ is the solution of the initial value problem ode

   \[ y' = 4xy \quad , \quad y(1) = 1 \quad , \]

   using mesh-size $h = 0.05$.

5. Use the **RK4** to find an approximate value for $y(1.1)$ if $y(x)$ is the solution of the initial value problem ode

   \[ y' = 4xy \quad , \quad y(1) = 1 \quad , \]

   using mesh-size $h = 0.05$.  
