Euler's Method for Solving $\frac{dX}{dt} = f(X), X(0) = x_0$

1. Choose a stepsize Δt. Set $t = 0$
2. Using the current value of X, the equation tells us rate of change: $\frac{dX}{dt} = f(X)$.
3. Use this rate of change to determine next value for X:

$$X(t + \Delta t) = X(t) + \left(\frac{dX}{dt} \times \Delta t \right) \ . \qquad (1)$$

4. Increase t by Δt: $t \longrightarrow t + \Delta t$.
5. Go to step 2

Choose smaller and smaller Δt until the solution curve $X(t)$ stops changing.