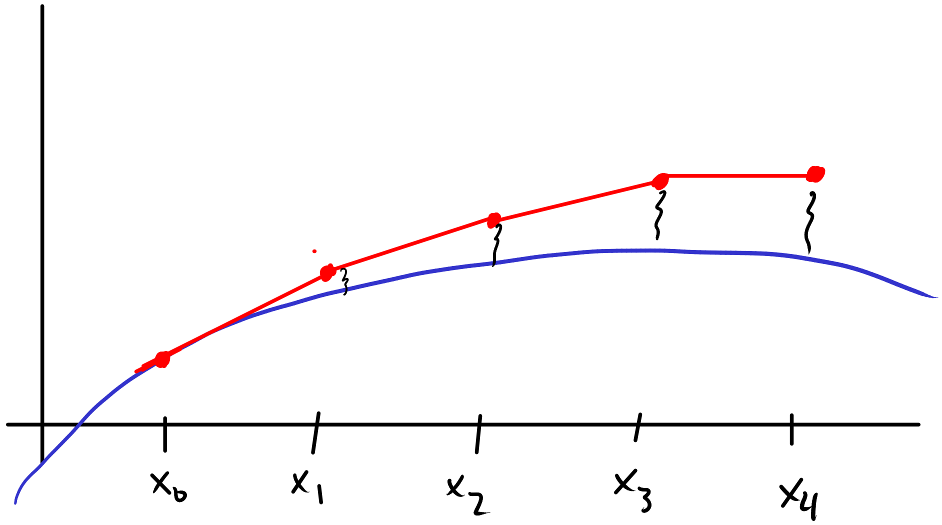
Another issue is that errors may add up (accumulate)

Eg.



Each step introduces some error, and they may all have the same sign.

Also the error <u>propagates</u> from one step to the next

$$y_{n+1} = y_n + h \cdot f(x_n, y_n)$$

this point is not actually on the solution curve we are trying to find, so the true slope could be slightly different.

Lastly, there is the issue of rounding / adequate representation of decimal numbers.

In spite of these limitations, Euler's method is fundamental to numerical solution of differential equations.