

By 16th of March:

(1) Use any programming language and the formal definition of derivative

$$\frac{df}{dx} = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

to numerically calculate the derivative of $\sin(x)$.

Check the result by comparing it with the analytically calculated derivative. What is the difference and where does it come from?