Source task and conventions

Plot $f(x) = \sin x$ and a derivative obtained by automatic differentiation, without using an explicitly coded cosine as the derivative.

Conventional solution and proof

The executable solution makes x a differentiable variable, evaluates the primitive sine, sums the outputs, and requests its gradient. Since every component depends only on its corresponding input, differentiating the sum returns the vector of the individual derivatives. The resulting curve is plotted together with the original sine. The evaluation procedure does not insert an explicit cosine formula.