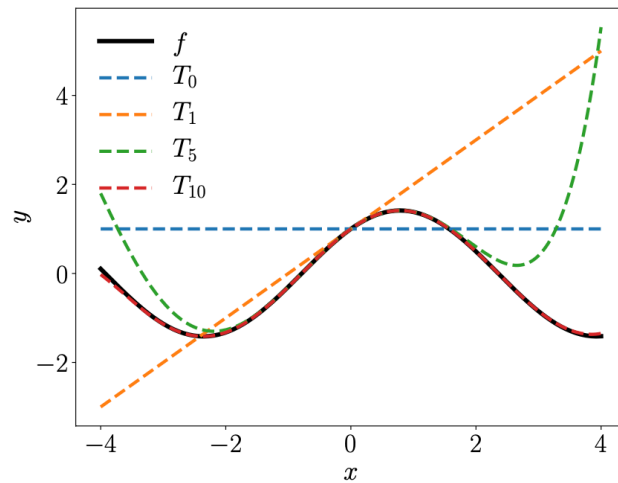


For PE06, you will generate a plot similar to Figure 5.4 on page 144 of the following textbook using the Taylor polynomials.

- Deisenroth, M. P., Faisal, A. A., & Ong, C. S. (2020). *Mathematics for Machine Learning*. Cambridge University Press.

Use the example 5.4 to plot $f(x) = \sin(x) + \cos(x)$ in $x \in [-4, 4]$ as well as T_0 , T_1 , T_3 , and T_5 . Use the range of y (or $f(x)$) $\in [-3, 6]$ and the step size of 0.001 for x values.

Figure 5.4 Taylor polynomials. The original function $f(x) = \sin(x) + \cos(x)$ (black, solid) is approximated by Taylor polynomials (dashed) around $x_0 = 0$. Higher-order Taylor polynomials approximate the function f better and more globally. T_{10} is already similar to f in $[-4, 4]$.



Optional: Find the point x_{\max} and x_{\min} that give the maximum and minimum values of $f(x)$.