Let  $f(x) = \cos(x) + \sin(x)$ 

$$g(x) = 4e^{x} - 3\cos(x) - \frac{1}{x}$$
$$h(x) = 3\sin(4) + 2\sin(x) + x^{732}$$

- 1. Find the derivative of each function.
- 2. Find an antiderivative of each function. Check your answer by taking the derivative!
- 3. Find the maximum and minimum values of f(x) on the interval  $[-\pi, \pi]$ .