Let \( f(x) = \exp(-x^2) \). Find a function \( F \) such that \( F'(x) = f(x) \).

Solution: Since \( f(x) \) is continuous, the \( F \) defined by

\[
F(x) = \int_0^x e^{-t^2} \, dt
\]

will do the job. By the Fundamental Theorem, \( F'(x) = \exp(-x^2) \).