Problem 1. A car is traveling at 100 feet per second when the driver suddenly applies the brakes. From this time on until the car comes to a stop, the car’s traveled distance is measured by \( s(t) = 100t - 5t^2 \).

i. In terms of time, how long does it take before the car comes to a stop?

ii. How far does the car travel before coming to a stop?

Problem 2. Let \( f(x) = x^2 + 3x + 1 - \sin(x) \). Find an equation of the line which is tangent to the graph of \( f(x) \) at the point \((0,1)\).