**Lab Exercise on Hill Climbing**

Hill Climb problem:  When a mountain is encountered, your robot shall walk uphill towards the top of the mountain.  The mountain has a roadway to reach the top. Assume the shape of the mountain represents with sine function and there are no obstacles on the roadway. Implement a hill climbing-based search algorithm to simulate the robot to detect the top.  Assume starting place of the robot on the mountain is at sin(0.1) and each step covers the following

1. h= 0.2 meters
2. h= 0.01 \*f^1(x), where f^1(x) is the derivative of f(x)