1. Find the minimum value of $f(x,y) = (x-2)^2 + (y-3)^2$ starting at $x = 1$ and $y = 1, \alpha = 0.01$ using the steepest decent method with stopping criteria of same two digit.

2. Perform one iteration of the optimal gradient descent method to locate the minimum of
$$f(x,y) = -7x + 1.2x^2 + 11y + 2y^2 - 2xy$$
Using initial guess $x = 0$ and $y = 0$ with $\alpha = 0.01$.

3. Consider the given function $f(x,y) = x^2 + y^2$. Let $(x_0, y_{0)=}(5,3)$ be the initial values, when $\alpha = 0.45$. Can you guess what the minimum of the function is from your calculations?