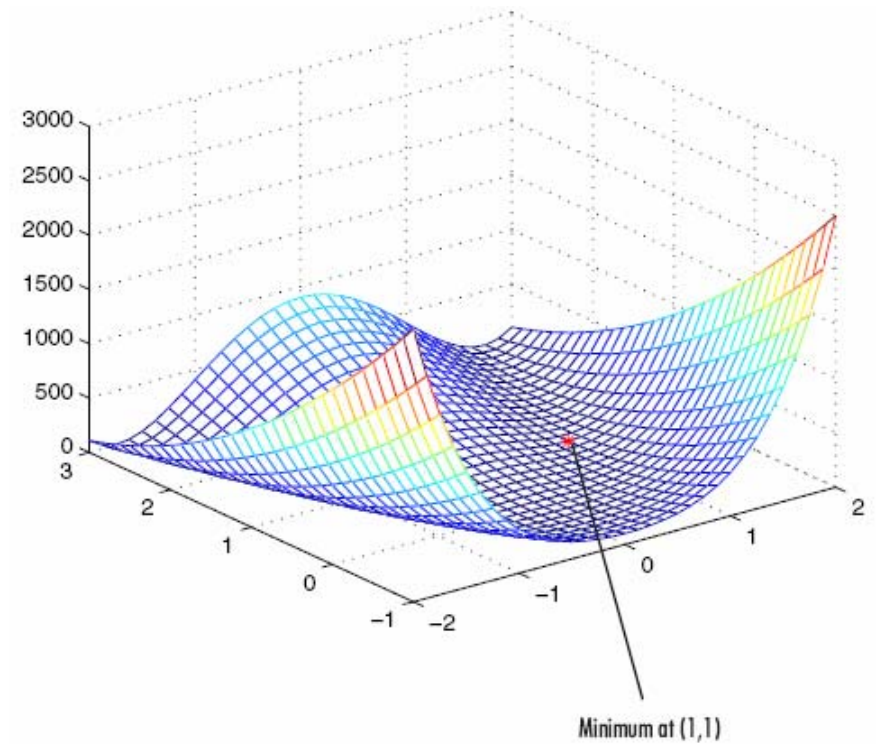
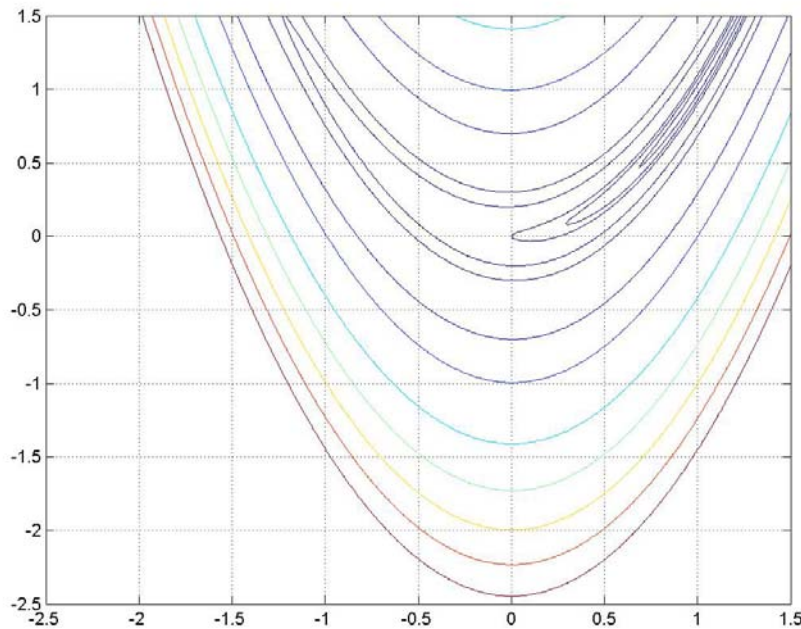


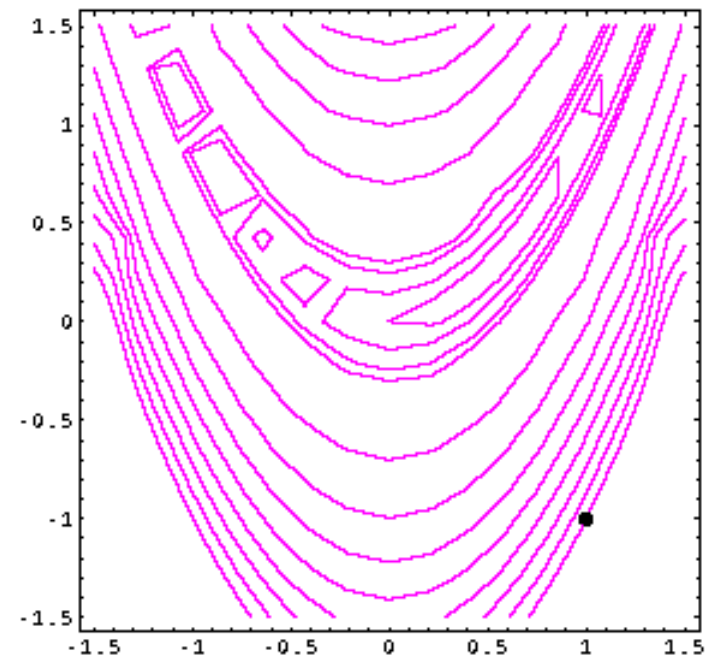
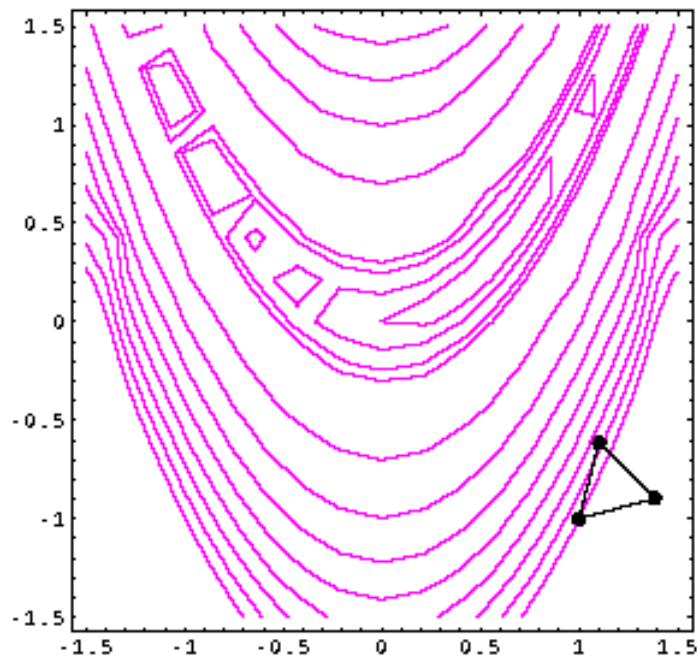
Rosenbrock's banana function

$$f(x_1, x_2) = 100(x_2 - x_1^2)^2 + (1 - x_1)^2$$
$$x^{(0)} = [1 \quad -1]^T$$
$$\langle x^* = [1 \quad 1]^T \rangle$$



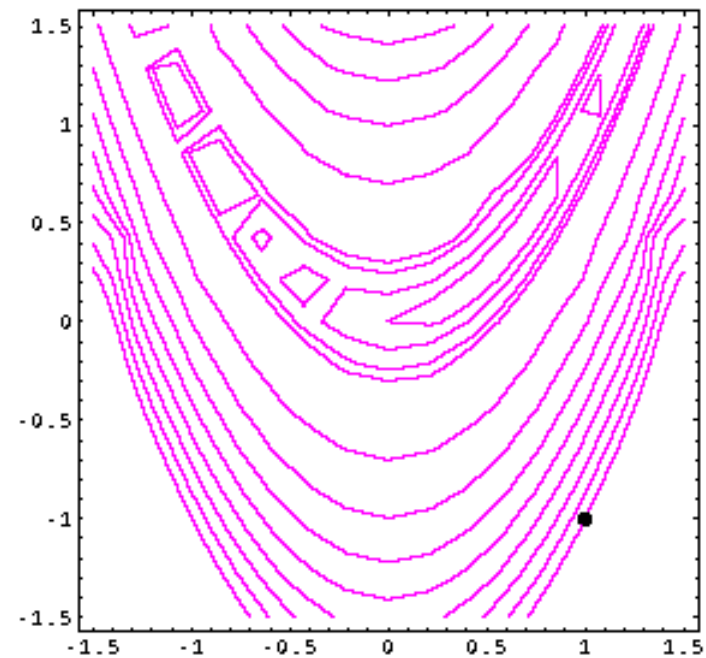
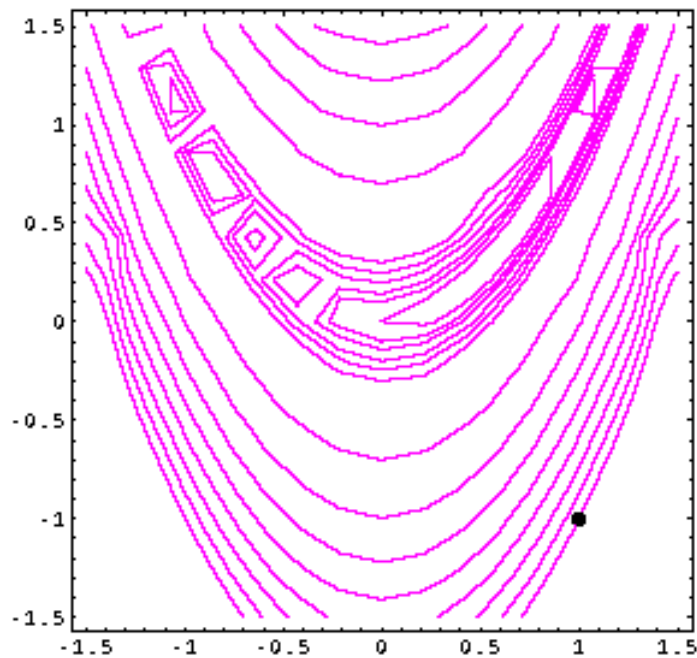
Zeroth Order Method

- Sequential Simplex Method
- Powell's Conjugate Method



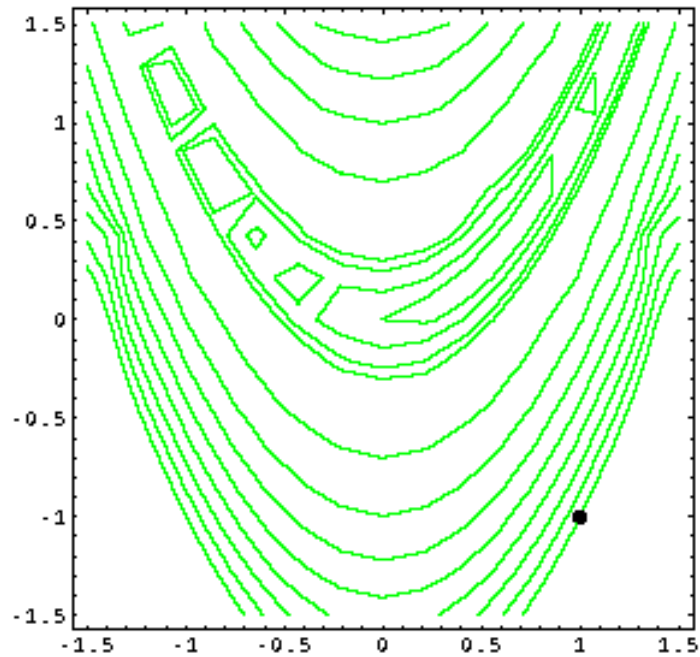
First Order Method

- Steepest Descent Method
- Fletcher-Reeves Conjugate Gradient Method

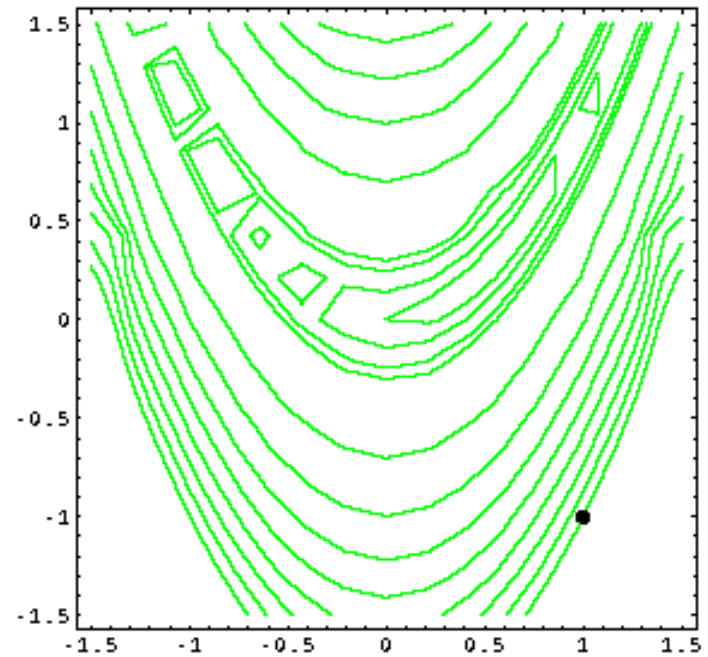


Second Order Method

- Newton's Method



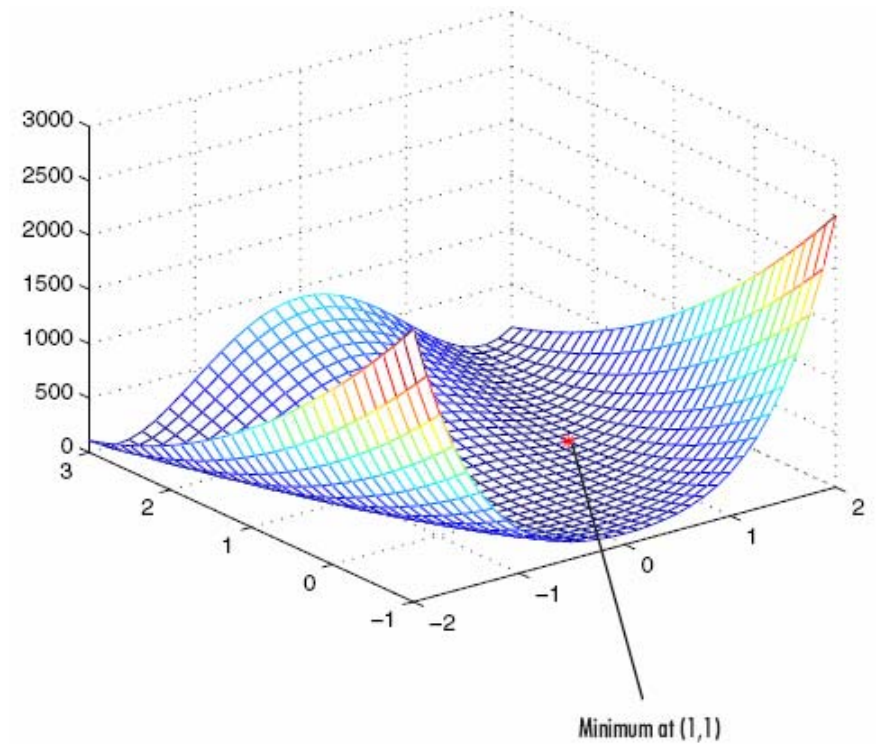
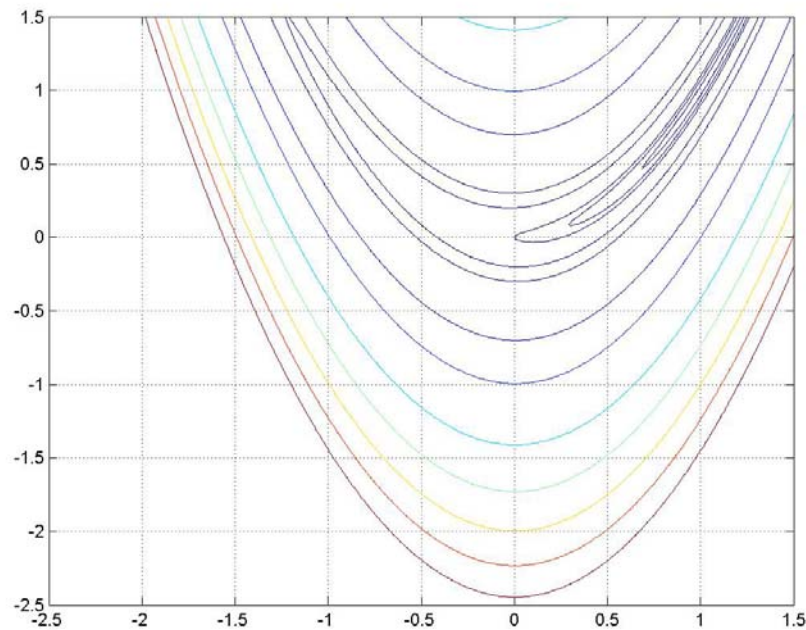
- Quasi-Newton Method



Test Function

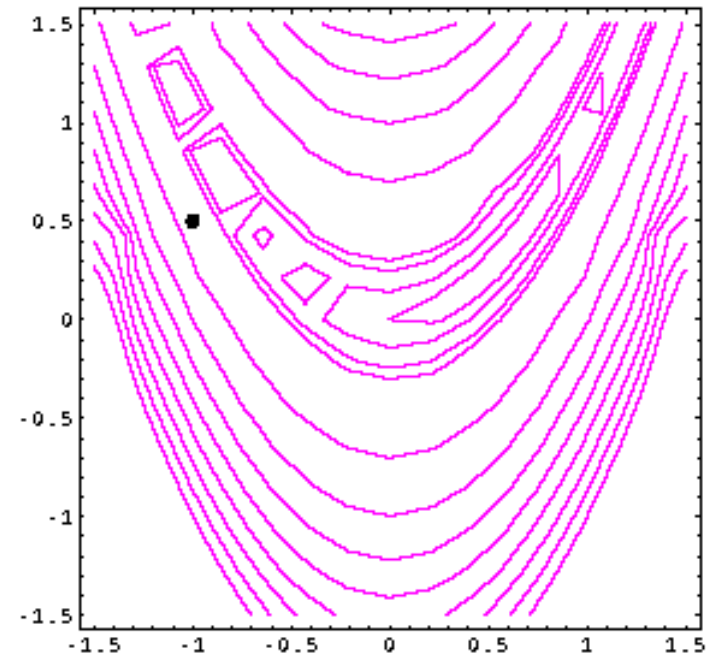
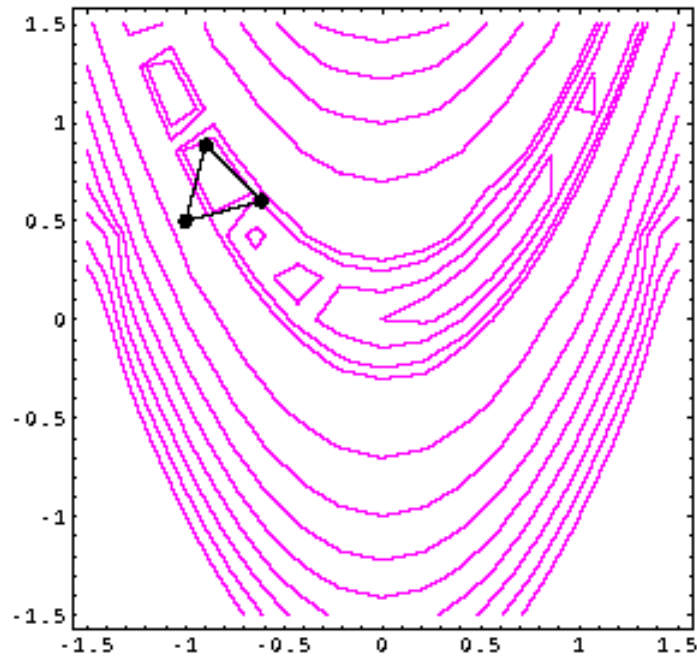
- Rosenbrock's banana function

$$f(x_1, x_2) = 100(x_2 - x_1^2)^2 + (1 - x_1)^2$$
$$x^{(0)} = [-1 \quad 0.5]^T$$
$$\langle x^* = [1 \quad 1]^T \rangle$$



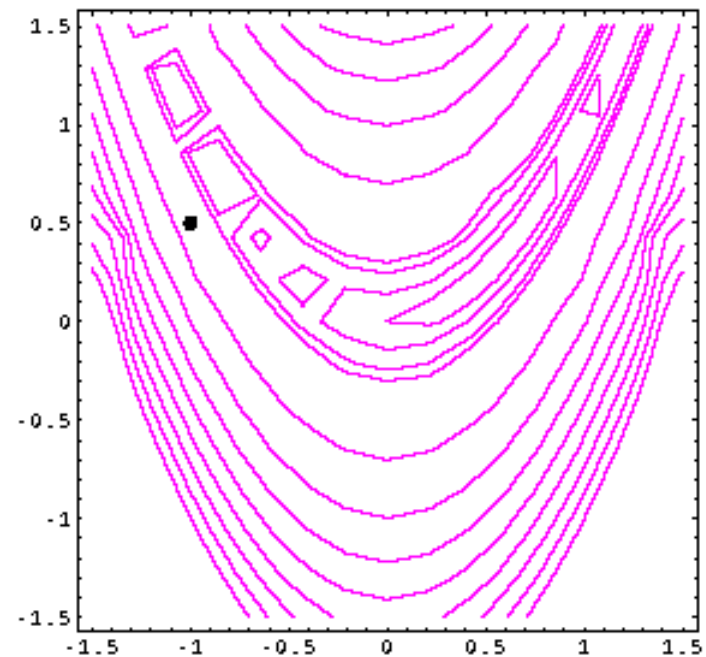
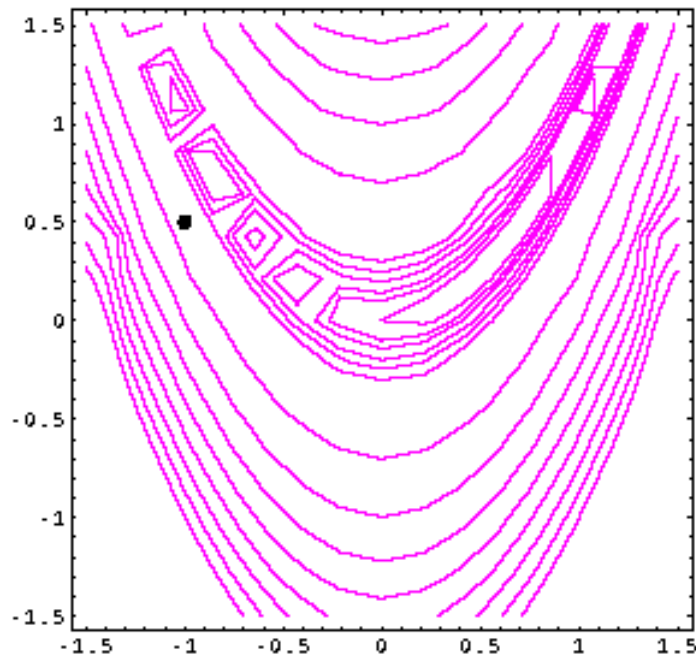
Zeroth Order Method

- Sequential Simplex Method
- Powell's Conjugate Method



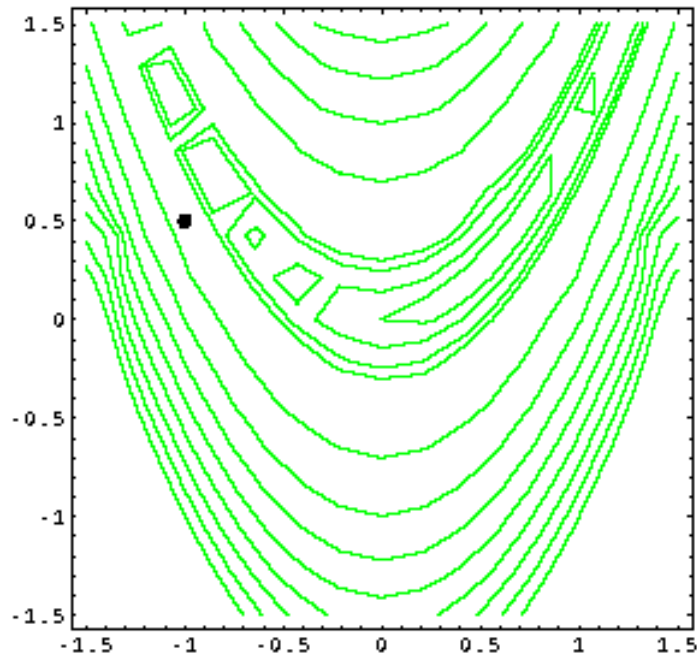
First Order Method

- Steepest Descent Method
- Fletcher-Reeves Conjugate Gradient Method

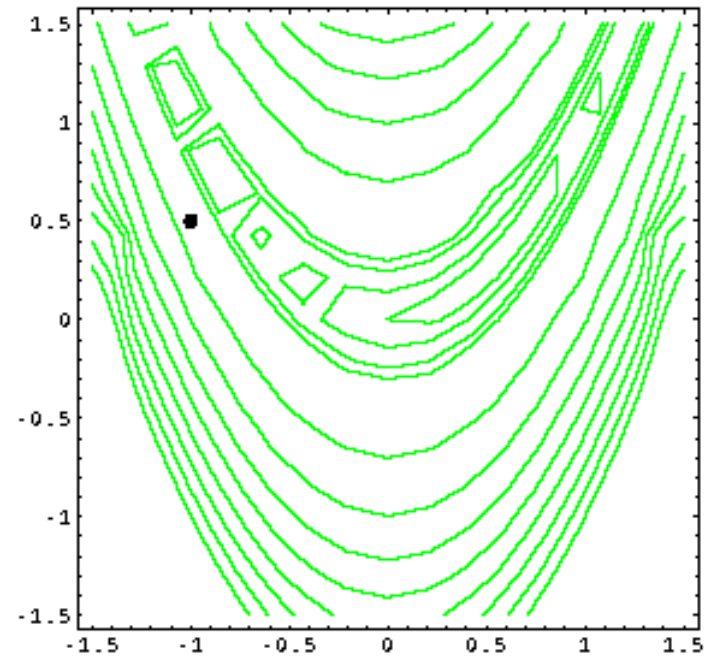


Second Order Method

- Newton's Method



- Quasi-Newton Method



Matlab Optimization Toolbox: bandem

