HOMEWORK 6

due date: April 3, 2018

Find maximum and minimum (if they exist) of the function f on the set M, where

$$f(x,y,z) = x + 2y + z \qquad \text{and} \qquad M = \left\{ [x,y,z] \in \mathrm{R}^3 : z = x^2 + y^2 \ \&\ x + z \leq 10 \right\}.$$

Use Lagrange multipliers. (Can you draw the set M?)