

Summary of lecture -Lagrange multipliers

- (If it exists) a solution to a constrained problem may be found by finding all points (x, y) where

$$f_x + \lambda g_x = 0,$$

$$f_y + \lambda g_y = 0,$$

$$g = 0.$$

f is the function being minimised or maximised and $g = 0$ is the constraint function.

- We solve these 3 equations in 3 unknowns (x , y and λ), it doesn't guarantee that a solution exists
- justify existence by other means (e.g. drawing a sketch).