

# Week 9 - Optimization

Thursday, November 14, 2019 10:51 AM

## Process

- 1) Name all variables (+ draw a diagram if needed)
- 2) Write a formula for the thing we want to maximize (or minimize)

↳ This may be in terms of many variables

- 3) Find any other equations relating the variables.
- 4) Substitute equations from 3) into 2) until you have a function of 1 variable.
- 5) If possible, constrict the possible values of the variable to a closed interval.
- 6) Locate the max (or min).
  - a) Find  $f'(x)$ .
  - b) Set  $f'(x) = 0$  and solve.
  - c) Test all solutions to b) plus endpoints by plugging into  $f$ .