Exploring Lagrangian Optimization

Aaron @philosolog
Brennan @Brensum
Jordan @Jadams06
Kerem @Ottoerm7
Oliver @aureliusandreas

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Section 1: The Extreme Value Theorem in $\mathbb{R}^2$

Chapter 1

Hungry Joe

The protagonist of this story will be arbitrarily named "Joseph." Because he is not really that important, we'll refer to him as "Joe." Right now, he is critically hungry and craving bird meat.. so he goes to the local Carl's Jr.

Chapter 2

Utilmaxxing

Theorem 1 († The Extreme Value Theorem in $\mathbb{R}^2$)**.** Suppose that $f(x)$ is continuous on the interval $[a, b]$ then there are two numbers $a \leq c, d \leq b$ so that $f(c)$ is an absolute maximum for the function and $f(d)$ is an absolute minimum for the function.

Section 2: The Extreme Value Theorem in $\mathbb{R}^3$

Chapter 3

Hangry Joe

Not fully satisfied with the Chicken Jr. he bought, Joe gets angry. Now, he not only wants to satisfy himself with the chicken but also rigor himself with spiciness. So, Joe wants to buy the Spicy Chicken Jr.

Chapter 4

He's a Nerd!

Section 3: The Method of Lagrange Multipliers

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Concluding Remarks

Aaron: I'm really proud about the amount of work that went into the writing of this project! I hope it was interesting at the least!

Brennan:

Jordan:

Kerem:

Oliver: