

SECTION 4.7 OPTIMIZATION

INSTRUCTOR NOTES

There are two sheets that should take at least 2 days.

Sheet 1 (day 1)

This should actually take less than one full day. I would go through these at the board. The purpose is for the students to practice a framework for working problems all of which look different. The goal is for students to see the pattern that goes:

identify your goal (ie what is supposed to be maximized or minimized)

write that quantity as a function of one variable

use calculus to identify extrema – emphasizing that you will need to check that your critical numbers actually correspond to your goal. That is, emphasize that if we are looking for a minimum, we should check that our critical number actually corresponds to a minimum and not a maximum or neither.

Sheet 2 (day 1 and day 2)

This has actually challenging problems. They should do this in groups at the board. Ideally everyone gets started on the first problem at the end of day 1 and at the beginning of day 2 you can go back over this. Then on day 2, they work on the remaining three problems at the board.

Depending on the personalities, you may need to remind/require them to provide SOLUTIONS on the board, not just answers. You may need to push them to actually use calculus to check the correctness of their answers.