

Non Linear Programming: Homework 3

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1 2.33

2 3.3

2.1 Hint

Note on 3.3: for full credit, you must be able to handle the case where the function is not differentiable. You may prove the differentiable case alone for partial credit.

3 3.15

4 3.20

4.1 Hint

Note on 3.20-3.23: There are a lot of subproblems here. You might feel intimidated here at first. But none of the subproblems are particularly long. All you do is identify the "basic" functions involved and the operations used to combine them together. For instance, 3.20 (a), the easiest one of the bunch, is the composition of a norm, which is convex, and an affine function. That's it. Just be very explicit about the rules you are using and why they are applicable.

5 3.21

6 3.22

7 3.23