

IE (598ns)
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Homework 4
Due December 3, 2007

Exercise 1. Let $X \subseteq \mathbb{R}^n$ be a closed set and $\theta : X \rightarrow \mathbb{R}$. Let $x^* \in X$ be a local minimum of the following problem

$$\begin{array}{ll} \text{minimize} & \theta(x) \\ \text{subject to} & x \in X. \end{array}$$

Show that x^* is a D -stationary point, i.e.,

$$\theta^D(x^*; d) \geq 0 \quad \text{for all } d \in T_X(x^*),$$

where $T_X(x^*)$ is the tangent cone of X at x^* .

Exercise 8.5.3. Show only the first statement, namely, show that every accumulation point of $\{x^k\}$ is a stationary point of f on K .

Exercise 8.5.4. Parts (a) and (b) only.

Exercise 9.5.4.

Exercise 9.5.14.

Exercise 9.5.15.