Imagine that you are the chief strategist for a multinational chain of retail stores. You have a set $\mathcal{L}$ of locations at which you might open a new store, and a set $C$ of cities which you wish to serve. For each city $c \in C$ and each location $\ell \in \mathcal{L}$, $d(c, \ell)$ is the distance from $c$ to $\ell$. To open a store at location $\ell \in \mathcal{L}$ will require you to pay a bribe $b(\ell)$ to the local government to obtain the necessary permission. You have determined that a customer is likely to shop at your store if there is a location at distance $D$ or less. Your task is to find a set $S \subseteq \mathcal{L}$ of locations to open, such that every city has a location at distance $D$ or less, which minimizes the cost of the bribes you will need to pay.

Below is a decision version of this problem, called STORE-OPENING. Prove that STORE-OPENING is **NP**-complete.

**Instance:** A set $\mathcal{C}$ of cities, a set $\mathcal{L}$ of locations, a distance function $d : \mathcal{C} \times \mathcal{L} \mapsto \mathbb{N}$, a cost function $b : \mathcal{L} \mapsto \mathbb{N}$, and $B, D \in \mathbb{N}$.
**Question:** Does there exist a set $S \subseteq \mathcal{L}$ such that $\sum_{\ell \in S} b(\ell) \leq B$, and for all $c \in \mathcal{C}$,

$$\min_{\ell \in S} \{d(c, \ell)\} \leq D$$

**Hint:** Try reducing from SET-COVER, so that locations correspond to sets.