1. (10 points) Let $S \subseteq \mathbb{N}$ be a nonempty set. Show that $S$ is decidable iff there is a function $f : \mathbb{N} \to \mathbb{N}$ such that $f$ is computable, $f$ is nondecreasing, and $\text{Im } f = S$. 
2. (10 points) Let $A, B \subseteq \mathbb{N}$ be enumerable sets. Show that $A \times B$ is enumerable.