Assignment #5; Due February 20 at start of class

1. Consider the set of indices $\text{NonConstant} = \text{NC} = \{ f | |\text{range}(\varphi_f)| > 1 \}$. Use Rice’s Theorem to show that $\text{NC}$ is not recursive (not decidable). Note that members of $\text{NC}$ do not need to converge for all input, but they must converge on at least two input values that produce different output values. Hint: There are two properties that must be demonstrated.

2. Show that $\text{K} \leq_m \text{NonConstant}$, where $\text{K} = \{ f | \varphi_f(f) \downarrow \}$. 