

CS 336, Homework 1 additional problem

Let  $R = \{ \langle f, g \rangle \mid f : \mathcal{R} \rightarrow \mathcal{R} \wedge g : \mathcal{R} \rightarrow \mathcal{R} \wedge \exists a \in \mathcal{R}, b \in \mathcal{R} (f(a) = g(b) \wedge f(b) = g(a)) \}$ . Prove or disprove that  $\forall f : \mathcal{R} \rightarrow \mathcal{R} \exists g : \mathcal{R} \rightarrow \mathcal{R} \langle f, g \rangle \in R$