

Lecture #15: Many-One Reductions

Questions for Review

1. What is a **many-one reduction** from a language $L_1 \subseteq \Sigma_1^*$ to a language $L_2 \subseteq \Sigma_2^*$? What **notation** can be used to state that there is a many-one reduction from L_1 to L_2 ?
2. Describe something useful, concerning computability, that can be proved using many-one reductions that **cannot** be proved using oracle reductions — and explain why many-one reductions can be used for this, while oracle reductions cannot.
3. Describe one or more **mistakes** that students sometimes make when using many-one reductions to prove undecidability or unrecognizability — which you should watch for and avoid.