

CS 4810 Homework Assignment 10 due Monday class Nov 6.

We will grade your homework on clarity and quality of writing.

1. List five important ideas about computability that you should know.
2. Let $\Gamma(n)$ be the maximum number of steps an n state Turing machine can make starting with an input string of length at most n and halt. Is $\Gamma(n)$ computable? Give a short proof of your answer.
3. Is it decidable if a Turing machine enters a given state during a computation? Give a short proof of your answer.
4. When we say a problem is decidable, what do we mean? What does a problem definition have to do with a set?
5. Explain how we would show that it is undecidable whether the set accepted by a Turing machine is finite. Give enough of an explanation that shows that you understand the related material.