

Are the following sets finite, countably infinite, or uncountable?

1. \mathbb{N}
2. \mathbb{Q}
3. \mathbb{R}
4. \mathbb{C}
5. $\mathcal{P}(\mathbb{N})$
6. $\mathcal{P}(\mathbb{R})$
7. $\{0, 1, 2\}$
8. $L(a^*b^*)$
9. $\mathcal{P}(\{0, 1, 2\})$
10. $\mathcal{P}(L(a^*b^*))$
11. $L(\Sigma^*)$, where Σ is some finite alphabet.
12. $\mathcal{P}(L(\Sigma^*))$, the set of all languages on the alphabet Σ .
13. The set of all functions from \mathbb{N} into $\{0, 1\}$.
14. The set of all inputs for a Turing machine simulator that can fit on a DVD-ROM.
15. The set of all inputs for a Turing machine simulator.
16. The set of all inputs for a Turing machine simulator with no left transitions. What is the significance of there being no left transitions?
17. The set of all finite subsets of \mathbb{N} .
18. C , the Cantor set. C is the set of all real numbers in $[0, 1]$ that can be written in ternary using only 0's and 2's.