Decision Problems

A **decision problem** returns YES or NO on every input. Hence, a decision problem is usually described by a YES/NO question.

- ▶ 2-colorability (Can the input graph be vertex-colored with red and blue, so that no edge connects vertices of the same color?)

- ▶ 3-colorability (Can the input graph be vertex-colored with red, blue, and green, so that no edge connects vertices of the same color?)

- ▶ 2-SAT (Is the input 2CNF formula satisfiable?)

- ▶ 3-SAT (Is the input 3CNF formula satisfiable?)

- ▶ Hamiltonian Graph (Does the input graph have a cycle that visits every vertex exactly once?)

- ▶ Eulerian Graph (Does the input graph have a cycle that visits every edge exactly once?)