Category	NP-hard Problems	NP-complete Problems
Definition	A problem that is at least as hard as the hardest problems in NP.	A problem that belongs to both NP and is NP-hard.
Polynomial-time Reduction	Polynomial-time reduction from any NP problem to an NP-hard problem.	Polynomial-time reduction from any NP problem to an NP-complete problem.
Membership in NP	Not necessarily in NP.	Must be in NP.
Solvability	May or may not be solvable in polynomial time.	Unlikely to have a polynomial-time algorithm; no known polynomial-time algorithm exists.
Examples	Traveling Salesman Problem (TSP), 3-SAT, Vertex Cover.	Boolean Satisfiability (SAT), Knapsack Problem, Hamiltonian Cycle.
Importance	Serves as a benchmark for the complexity of problems.	Identifies the hardest problems in NP and serves as a basis for many other complexity results.
Relationship	All NP-complete problems are also NP-hard.	Not all NP-hard problems are NP-complete. Some NP-hard problems may not be in NP.