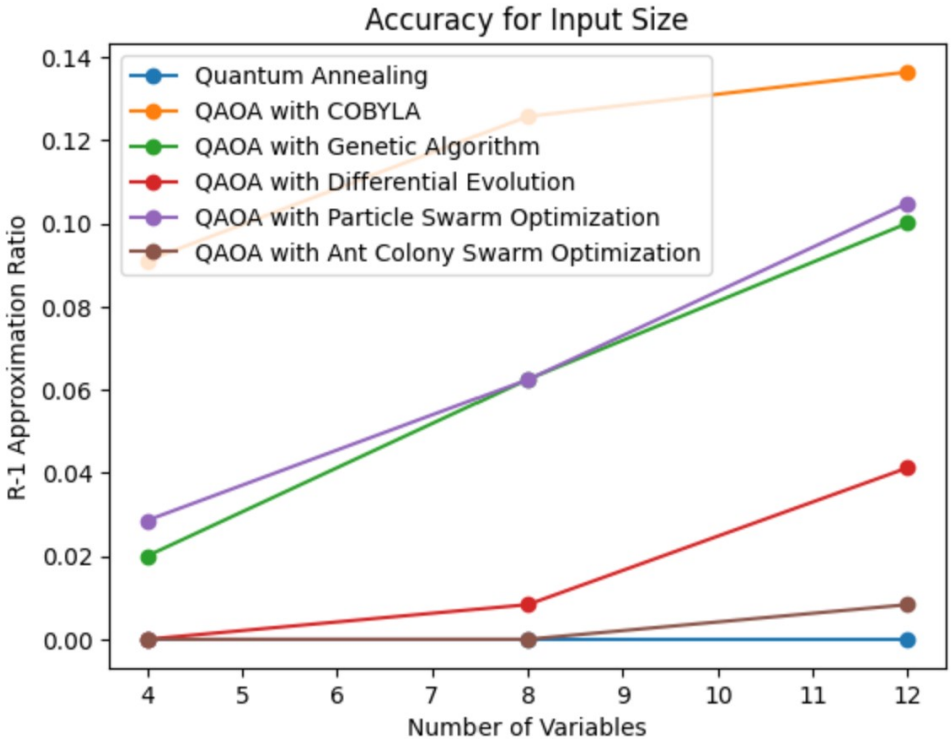

Algorithm 2: Quantum Annealing

Data: Problem Hamiltonian H, Annealing Schedule τ, Number of Annealing Steps T

Result: Solution State $|\psi_{\text{final}}\rangle$

Initialize a quantum system in an initial state $|\psi\rangle$;
for $t = 1$ **to** T **do**
  Calculate the annealing parameter $s = t/T$;
  Generate the time-dependent Hamiltonian $H_t = (1 - s) \cdot H_0 + s \cdot H_P$, where H_0 is the initial Hamiltonian and H_P is the problem Hamiltonian;
  Evolve the quantum system according to H_t for a time step Δt using a quantum gate or simulation technique;
end
Measure the quantum state $|\psi\rangle$ to obtain a classical bit string;
Return the classical bit string as the solution state $|\psi_{\text{final}}\rangle$;