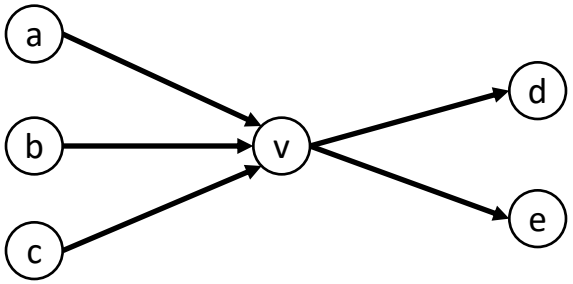
Directed Hamiltonian Cycle

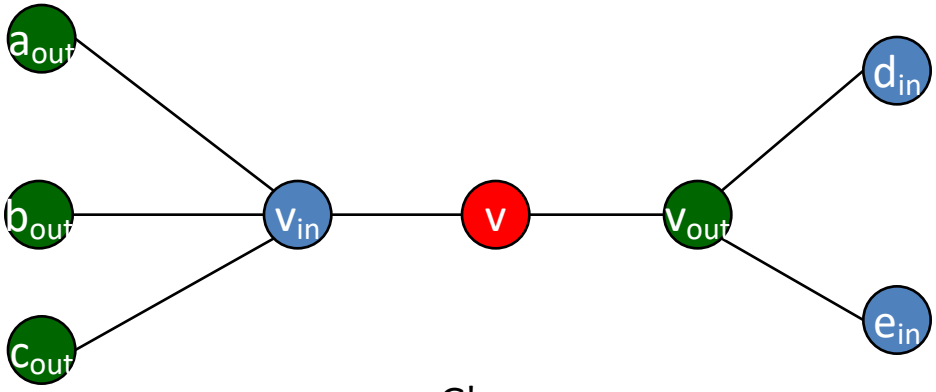
- DIR-HAM-CYCLE: given a digraph G = (V, E), does there exists a simple directed cycle Γ that contains every node in V?

- Claim. DIR-HAM-CYCLE $\leq_P$ HAM-CYCLE.

- Pf. Given a directed graph G = (V, E), construct an undirected graph G' with 3n nodes.



G



G'