

①

$VC \leq_p SC$  ?

$VC : (G = (V, E), R)$

$SC : (U, S = \{S_1, \dots, S_n\}, R')$

Reduction . Given  $G = (V, E), R$

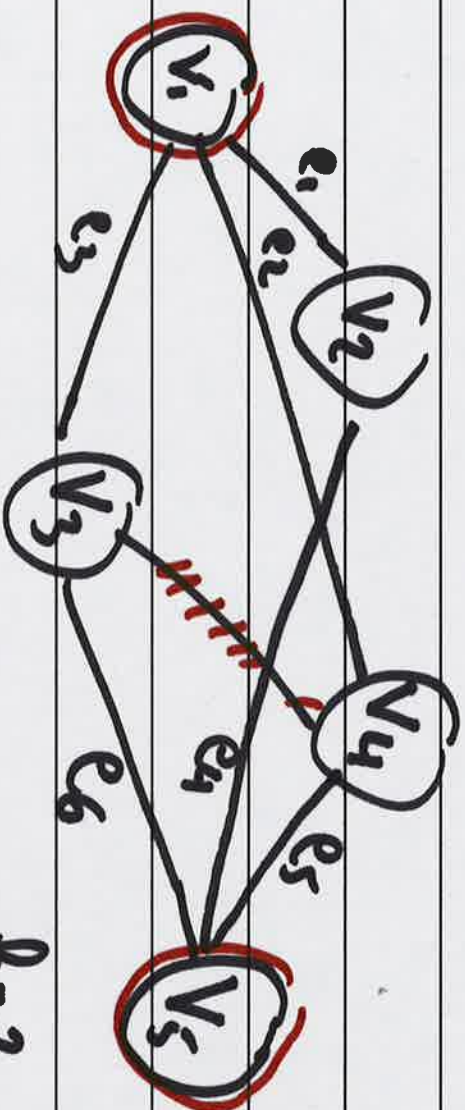
construct  $U = E$

$S = \{ S_n = \{ \text{all edges with } \text{one} \}$

$R' = R$  end point being  $v_1 \}$

$S_{v_1} \dots S_{v_n} \}$

$\}$



$R=2$

②

$VC \leq_p SC$  ?

→ this transfo. takes polynomial time  
in the size of  $VC$  instance ✓

→ correctness.

$VC(i) = \text{yes} \Leftrightarrow SC(f(i)) = \text{yes}$

$VC(i) \rightarrow SC(f(i))$