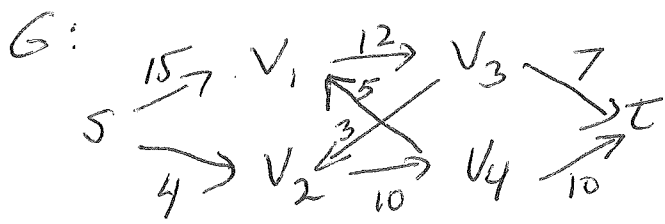


FORD-FULKERSON EXAMPLE

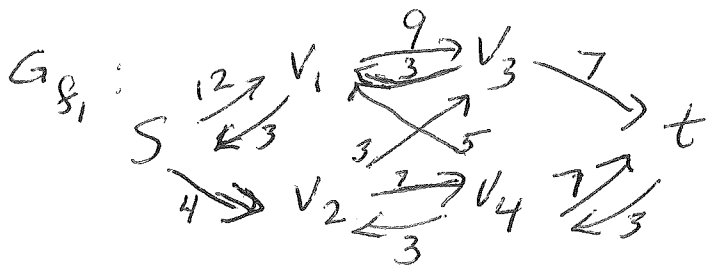
Flow graph G , find max-flow for G .



INITIAL flow $f_0 = 0$

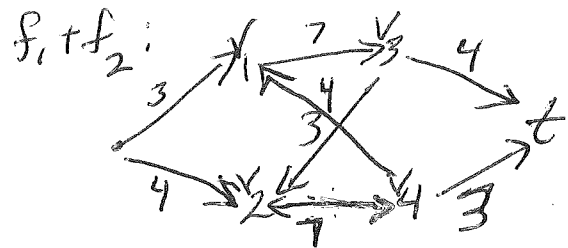
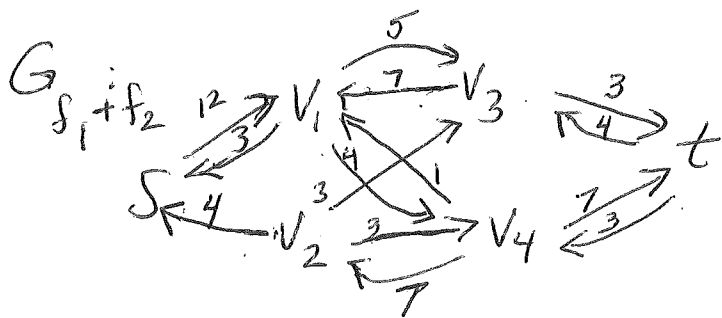
Augmenting path p_1 of cap. 3

$p_1 = s \rightarrow V_1 \rightarrow V_3 \rightarrow V_2 \rightarrow V_4 \rightarrow t, |f_1| = 3$



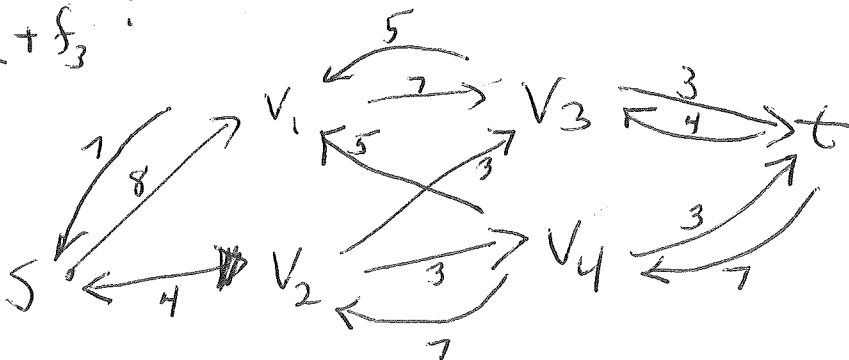
$p_2 = s \rightarrow V_2 \rightarrow V_4 \rightarrow V_1 \rightarrow V_3 \rightarrow t$

$c(p_2) = 4 \quad |f_1 + f_2| = 3 + 4$



$p_3 : s \rightarrow V_1 \rightarrow V_4 \rightarrow t \quad c(p_3) = 4$

$G_{f_1 + f_2 + f_3}$:

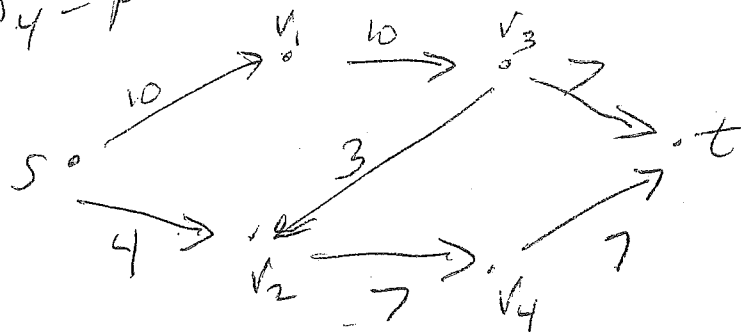


$p_4 : s \rightarrow V_1 \rightarrow V_3 \rightarrow t$

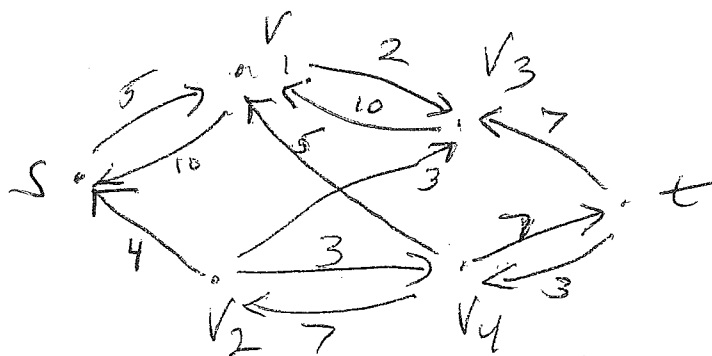
$c(p_4) = 3$

$$f_1 + f_2 + f_3 + f_4 = F$$

$$|F| = 14$$



G_F :



$F = \text{max flow}$, no further augmenting paths

* To find min cut, take the cut starting from s and add all vertices you can reach from s

in G_F (In our G , the min cut is (U, V) where

$$U = \{s, v_1, v_3\}$$

$$V = \{t, v_2, v_4\}.)$$