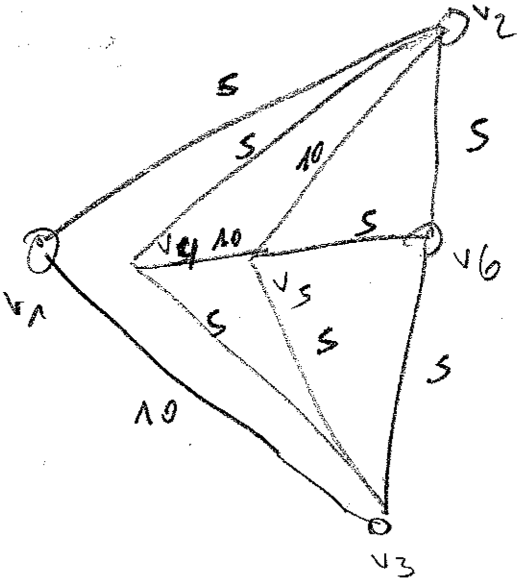
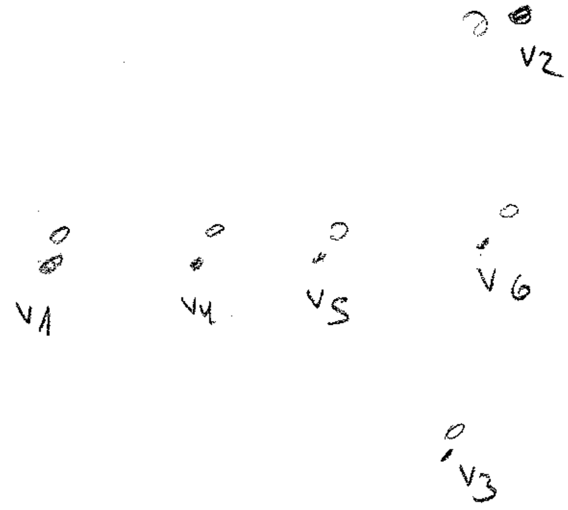




$\pi(v) = 0 \quad \forall v$ $\qquad$ even $F = V$ $\qquad$ $M = \emptyset$

odd $F = \emptyset$

free $F = \emptyset$

suche max. α, so dass $\pi(v) = \begin{cases} \pi(v) + \alpha & v \in \text{even} \\ \pi(v) - \alpha & v \text{ odd} \\ \pi(v) & \text{sonst} \end{cases}$

Bed. $\quad \pi(U) \geq 0 \quad |U| \geq 3$

$\sum_{e \in \delta(U)} \pi(U) \leq \omega(e) \quad \forall e$

$\rightsquigarrow e = (v_3, v_6) \qquad \pi(v_3) + \pi(v_6) \leq 5$

$\Rightarrow \alpha = 2{,}5$

$\omega_\pi(e) = \omega(e) - \sum_{e \in \delta(U)} \pi(U) = 0$ $\qquad$ v_3, v_6 erfüllt dies

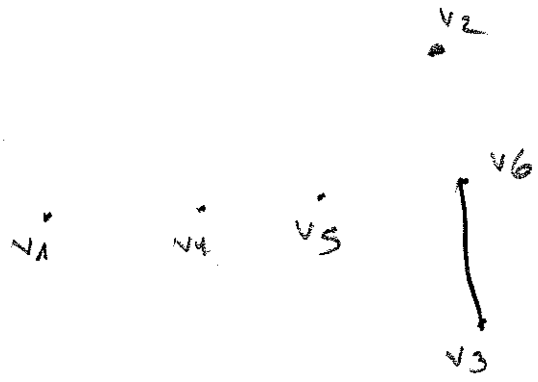
Da Kante zw. even/even (v_3, v_6 beide) in versch. Komp

$\Rightarrow$ M-augm. Pfad

Jetzt:

$M = (v_3, v_6)$ $\qquad$ $F = (v_3, v_6)$

$\pi(v_i) = 2{,}5 \quad \forall i$



$\Rightarrow$ even: v_1, v_4, v_5, v_2

free: v_6, v_3

odd: —

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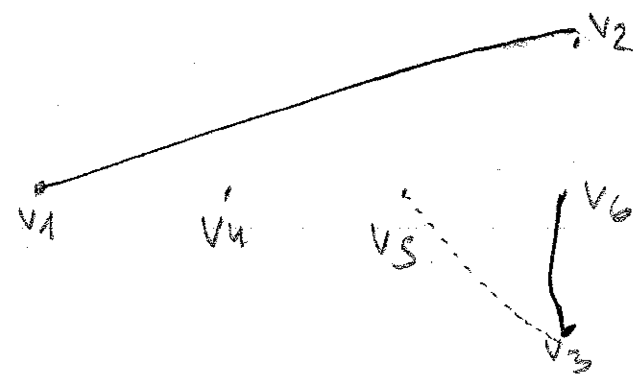
d bestimmt: $d = 0$, denn $w(v_1, v_2) = 5$, v_1, v_2 in even

$$\sum_{\substack{e \in \delta(u) \\ (v_1 v_2)}} \pi(u) = \pi(v_1) + \pi(v_2)$$

$\rightsquigarrow \underset{v_1 v_2}{w_\pi(e)} = 0$

$\Rightarrow e = (v_1 v_2)$ zw. zwei Komp., v_1, v_2 even $\Rightarrow$ Augm.

$\Rightarrow M = (v_3, v_6), (v_1 v_2)$ $\qquad$ $F: (v_3, v_6) \cup (v_1, v_2)$



$\pi(v_i) = 2{,}5$

even: v_4, v_5 $\qquad$ free: v_1, v_2, v_3, v_6

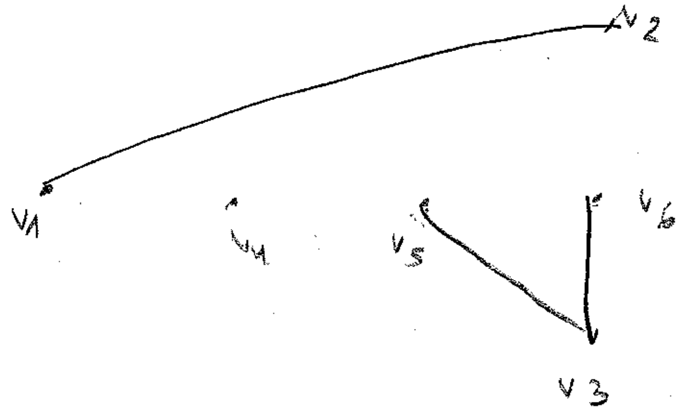
d bestimmt: $d = 0$ $\left(\sum_{\substack{e \in \delta(u) \\ v_2, v_4}} \pi(u) = \underset{+0}{\pi(v_2)} + \underset{+d}{\pi(v_4)} \leq 5 \right)$

oder v_3, v_5

$\Rightarrow$ z.B. $w_\pi(v_3, v_5) = 5 - \ldots = 0$

Ist Kante zwischen even (v_5) und free (v_3)

⇒ vergrößern F



⇒ even: $\underset{0}{v_4}, \underset{0}{v_5}, \underset{2}{v_6}$

odd: $\underset{1}{v_3}$

free: v_1, v_2

$\pi(v_i) = 2.5$

Analog wie vorher $\alpha = 0$, da (v_5, v_6) in even und $\omega(v_5 v_6) = 5$

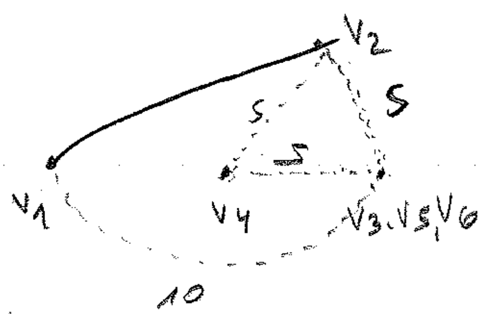
$$\underset{\{v_5, v_6\}}{\sum_{e\in\delta(u)}} \pi(u) = \pi(v_5) + \pi(v_6) = \omega(v_5, v_6) = 5$$

⇒ $\omega_\pi(v_5, v_6) = 0$

von even zu even in gleicher Komp (⇝ Blossom)

$\tilde{u} := \{v_3, v_5, v_6\}$ $\pi(\tilde{u}) = 0$

$\{\tilde{u}, v_i\}_{i \neq 3,5,6}$ ist Part. mit ung. Menge



$M = v_1 v_2$ $u = \{\tilde{u}, v_i\}_{i \neq 3,5,6}$ $\pi(v_i) = 2.5$ $i \neq 3,5,6$

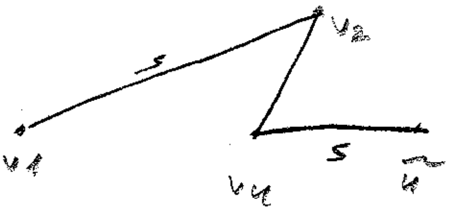
$\pi(\tilde{u}) = 0$

even: v_4, $\underbrace{\{v_3, v_5, v_6\}}_{\tilde{u}}$

free: $v_1 v_2$ ⇝ $\alpha = 0$ $\sum_{(v_1, v_4)\in\delta(u)} \pi(u) = \pi(v_2) + \pi(v_4)$ $+0$ $+\alpha$

v_2, v_4 geht von eben zu frei

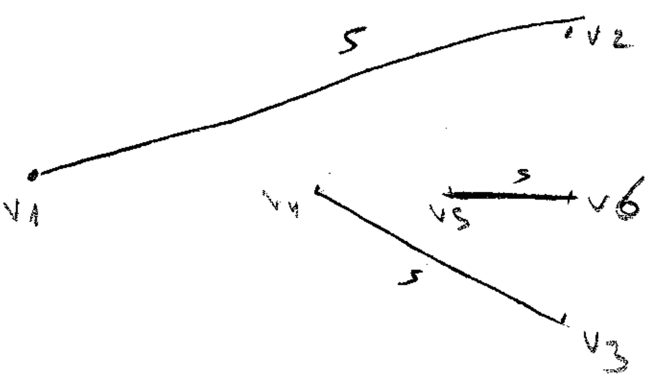
$\Rightarrow$ $M = (v_1, v_2)$ $\quad$ $F = (v_1, v_2) \cup (v_2, v_4)$



Auswahl $\delta = 0$ $\quad$ $v_4, \tilde{u}$

$\Rightarrow$ $v_1, v_2, v_4, \tilde{u}$ in free F

$\Rightarrow$ $\pi(\tilde{u}) = 0$ $\rightsquigarrow$ wieder öffnen



$\rightsquigarrow$ 15

Hinweis:
Alternativ kann man nach (v_3, v_6) z.B. (v_1, v_2) verwenden, wird danach (v_3, v_4) und (v_5, v_6) $(\omega(v_3, v_4) = \omega(v_5, v_6) = 0$
gewählt, erhält man ebenfalls das Ergebnis (ohne verwend. von einer Blüte (Blossom)