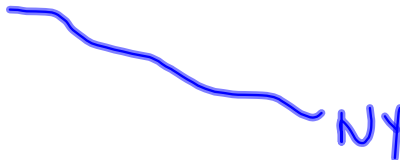
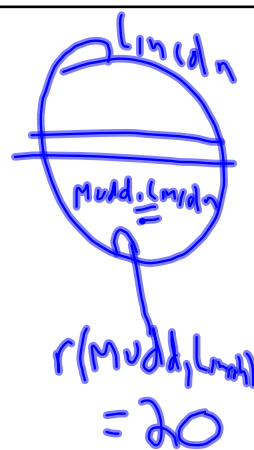


LA

Lincoln, NE



NY

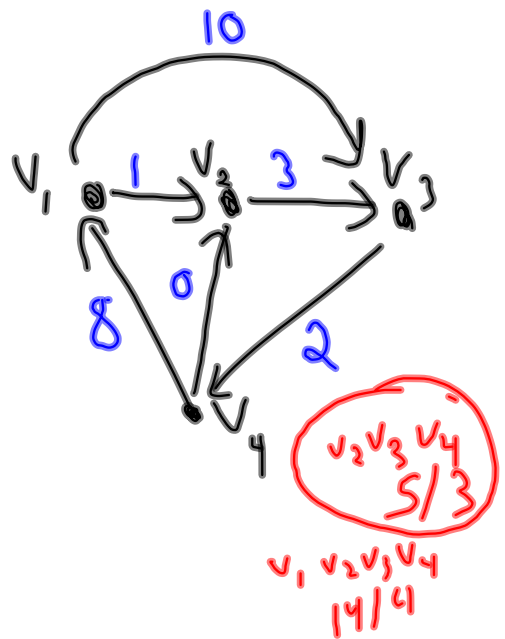


Min Mean Cycle

$$\rho(X) = \frac{\sum_{v,w \in X} c(v,w)}{|X|}$$

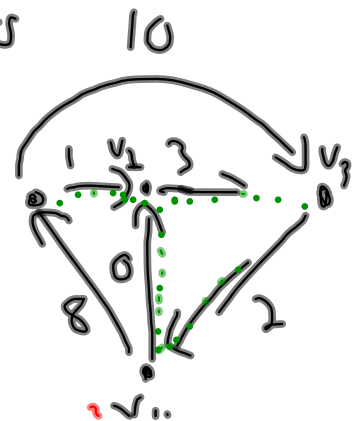
$$\rho^* = \min_{\text{cycles } X} \rho(X)$$

Assume G is strongly connected



$d^k(v)$ = length of a shortest directed
walk containing exactly k arcs
 from v_1 to v

	d^0	d^1	d^2	d^3	d^4	$\frac{d^4(v) - d^k(v)}{n-k}$
v_1	0	∞	∞	20	14	7/2
v_2	∞	(1)	∞	12	(6)	5/3*
v_3	∞	10	4	∞	15	11/2
v_4	∞	∞	12	6	∞	∞



$$d^k(w) = \min_v \left\{ d^{k-1}(v) + c(v, w) \right\}$$

for $k = 1$ to n
 for vertices w
 all edges once $\rightarrow O(nm)$ time

$$\rho^* = \min_{v \in V} \max_{0 \leq k \leq n-1} \left\{ \frac{d^n(v) - d^k(v)}{n-k} \right\}$$

