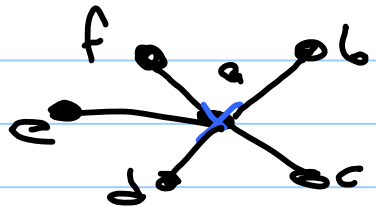
25.05.2021

Örnek:



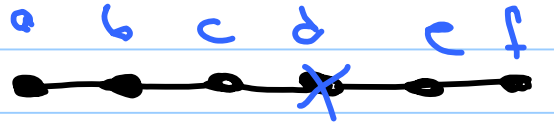
$K_{1,5}$

6 tepe, 5 eşmH,

$k(K_{1,5}) = 1$

$k_{ort}(K_{1,5}) = ?$

$\cong 1.83$



P_6

6 tepeli, 5 eşmH,

$k(P_6) = 1$

$k_{ort}(P_6) = ?$

$k_{ort}(P_6) = \frac{2+1+1+1+1+2}{6} = \frac{8}{6} \cong 1.33$

hangisi daha düzenli?

parçalanma bakımından yıldız graf daha düzenlidir.

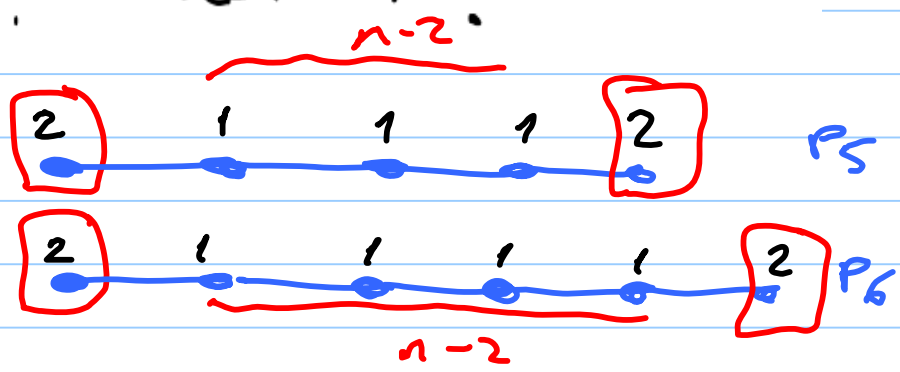
Örnek: Önemli grafların ortelama alt connectivity değerlerini bulunuz.

$k_{av}(P_n) = ?$ $k_{av}(C_n) = ?$ $k_{av}(K_n) = ?$

$k_{av}(W_{1,n}) = ?$ $k_{av}(K_{1,n}) = ?$

$k_{av}(P_n) = ?$

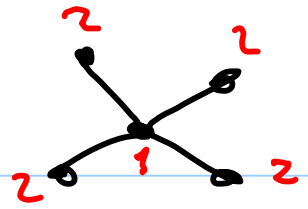
n tepeli



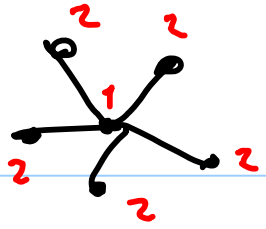
$$k_{av}(P_n) = \frac{2.2 + (n-2).1}{n} = \boxed{\frac{n+2}{n}}$$

$$\boxed{k_{av}(P_6) = \frac{8}{6}}$$

$k_{av}(K_{1,n}) = ?$



$K_{1,4}$

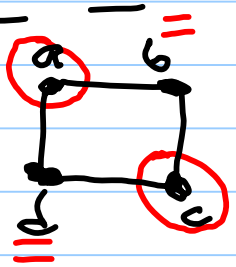


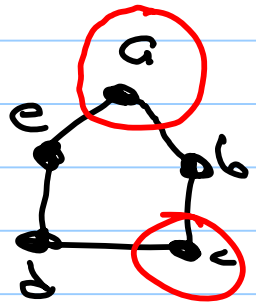
$K_{1,5}$

$$k_{av}(K_{1,n}) = \frac{1 \cdot 1 + n \cdot 2}{n+1} = \boxed{\frac{2n+1}{n+1}}$$

$$k_{av}(K_{1,5}) \underset{n=5}{=} \frac{11}{6} \cong 1.83$$

$k_{av}(C_n) = ?$





$\forall v \in V(G)$ sia $\deg_v(G) = 2$

$$\boxed{k_{av}(C_n) = 2}$$

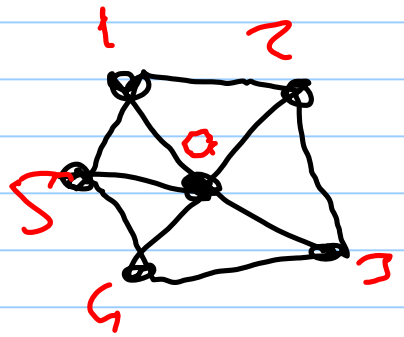
Tanım

$$k_{av}(K_n) = n-1 .$$

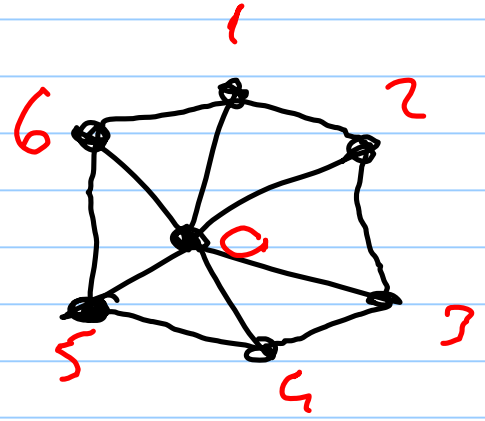
$k(K_n) = n-1 \Rightarrow \forall v \in V(G)$ için $S_v(K_n) = n-1$ 'dir.

Teorem

$k_{av}(W_{1,n}) = ?$



$W_{1,5}$



$W_{1,6}$

$S_G(w_{1,5}) = \{a, 1, 3\}$

$= \{a, 2, 5\}$

$= \{a, 2, 5\}$

3 elements

$\forall v \in V(w_{1,n})$ için

$S_v(w_{1,n}) = 3$

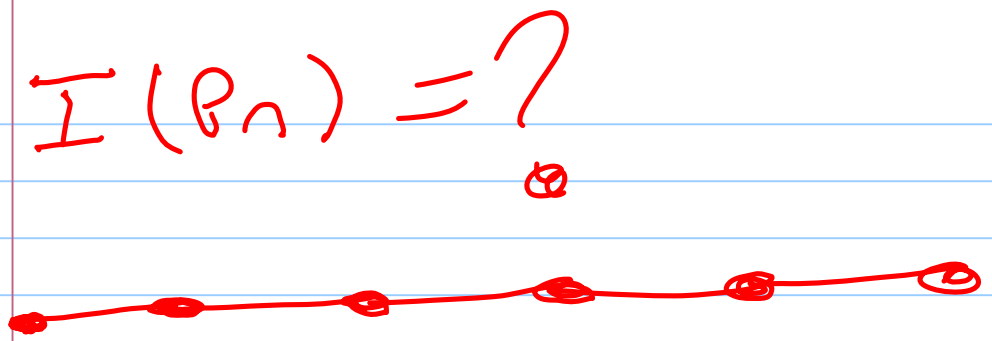
$\Leftarrow$

$k_{av}(w_{1,n}) = 3.$

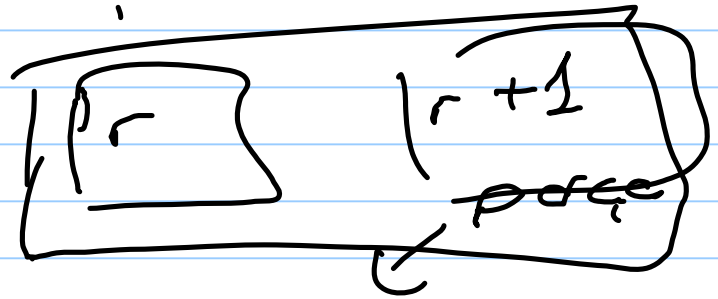
polinom zamanda hesaplanabilir?

Connectivity polinom zamanda hesaplanıyorsa, ortalama alt connectivity de polinom zamanda hesaplanabilir.

$I(P_n) = ?$



$\|S\|$	$\nu - S$
1	2
2	3
⋮	



encod.

*) Teorem:) G graf n tepe: bir graf dsn.

Bu durumda $M(G-S) \geq \frac{n-|S|}{w(G-S)}$

grafın ctiler min tepe.

S, ctil dilirse sonra geriye kalan grafdaki en büyük parçanın eleman sayısı.

↳ parça sayısı

yol gösterici

$$m(6-5) \geq \frac{n-r}{r+1} \quad (*)$$

$$I(p_n) \geq \min_r \left\{ r + \frac{n-r}{r+1} \right\}$$

fonksiyon

$f(r)$

$$f'(r) = 1 + \frac{-1.(r+1) - 1.(n-r)}{(r+1)^2}$$

$$\frac{r^2 + 2r + 1 - r - 1 - n + r}{(r+1)^2}$$

$$r = 2\sqrt{n+1} - 2$$

min

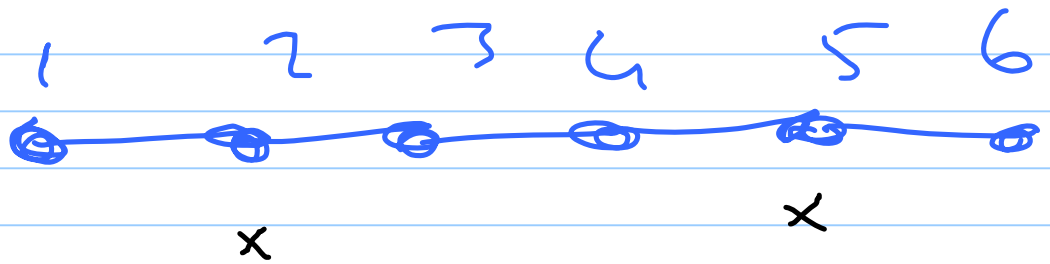
$$I(p_n) = \lceil 2\sqrt{n+1} \rceil - 2.$$

P6 icin: $I(P_6) = \lceil 2\sqrt{7} \rceil - 2$

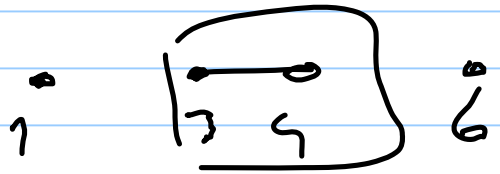
$\sqrt{7} = 2.6$

$= \lceil 2.(2,6) \rceil - 2$

$= 6 - 2 = 4$



S	|S|	m(6-S)	I*
{2}	1	4	5
{2,5}	2	2	4



{2,4}	2	2	4

$\{2, 4, 5\}$ $\quad 3 \quad 1 \quad 4$

$$I(P_6) = 4$$

$$I(P_n) = \lceil 2\sqrt{n+1} \rceil - 2$$

Çalışma Sorusu:

$I(C_n) = ?$

Yanıt: $I(C_n) = \lceil 2\sqrt{n} \rceil - 1$.

$I(K_n) = ?$

n

$I(K_{1,n}) = ?$

$\lceil 2 \rceil$