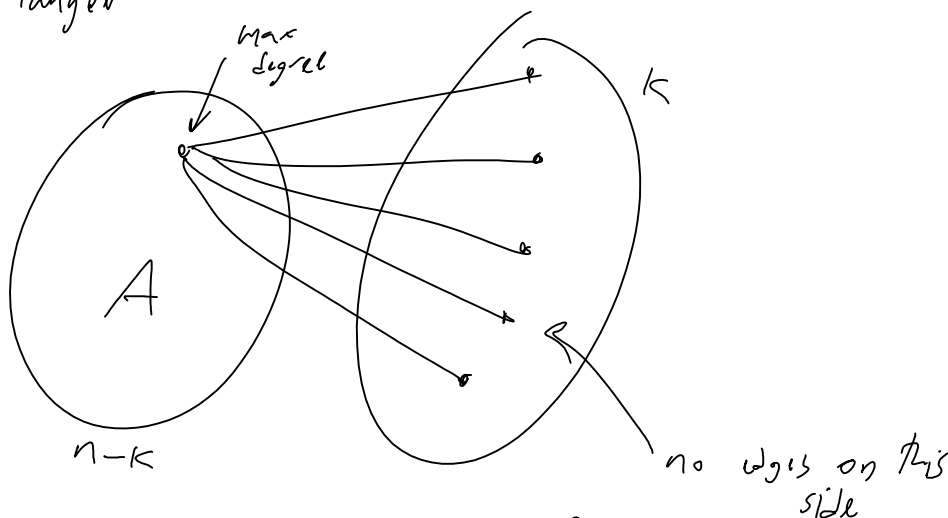


Over all graphs G , what's

$$\max_{G \neq \Delta} |E(G)| \stackrel{?}{\leq} \frac{n^2}{4}$$

↑
triangle



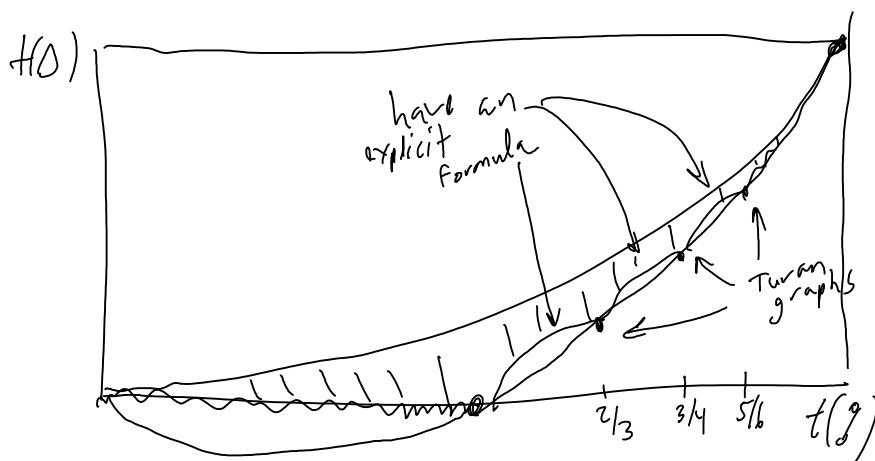
$$|E| \leq \sum_{a \in A} \deg a \leq (n-k)k \leq \frac{n^2}{4}$$

A homomorphism $f: G \rightarrow H$ is $f: V(G) \rightarrow V(H)$ which maps edges to edges.

$$t(G, H) := \frac{|\text{hom}(G, H)|}{|V(H)|^{|V(G)|}}$$

We know $t(\Delta, f) = 0 \Rightarrow t(\Delta, G) \leq \frac{1}{2}$

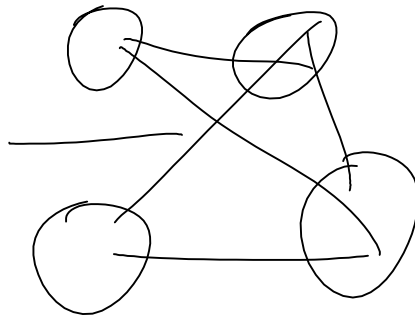
What are the possible $(t(\Delta, G), t(\mathcal{I}, G))$ pairs?



$$t(\Delta) \leq t(1)^{3/2} \quad (\text{clever use of Cauchy-Schwarz})$$
$$t(\Delta) \geq 2t(1)^2 - t(1)$$

The Turan graph:

Take all
edges not
crossing the
wall.



$k-1$ pieces, as
even as possible