Rozdział 11

Friday, 31 January 2025 20:05

Avoiding Hamiltonian cycle.

$$ex(n, C_n) = \binom{n-1}{2} + 1$$

Proof: lower bound by simple construction. Upper bound by induction.

Theorem (Ore, 1966)

If every pair of non-adjacent vertices x, y: $d(x) + d(y) \geq n$
then G contains Hamiltonian Cycle.

Theorem (Pósa, 1962)

If G is a graph with degrees $d_1 \leq d_2 \leq \dots \leq d_n$
s.t $d_i \geq i+1$ for $i < \frac{n}{2}$, then G contains C_n.

Corollary (Dirac, 1952)

$\delta(G) \geq \frac{n}{2} \Rightarrow C_n \subset G$:)