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Graph Algorithms with Hostile Partners

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Abstract

A short description of the project goes here.

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Introduction

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Dominating sets

We begin by listing some definitions.

Definition. The Dominating set, D, of a graph $G = (E, V)$ is any subset of V such that every vertex in V is adjacent to at least one vertex in D.

Definition. The Dominating number, $\gamma(G)$, of a graph $G = (E, V)$ is the size of the smallest dominating set of G.

Definition. Independent set, max independent set.

2.1 min size dominating set

Lemma 2.1. *Let G be a graph and X be a subset of the vertices of G.*

The minimum size of a dominating set is greater than or equal to the size of the maximum independent set.

Proof. Let X be a minimum dominating set in the graph G. □

Theorem 2.2. *Let G be a graph, such that the number of vertices in G, n, is ≥ 4. Then for any G,*

$$\gamma_g(G) \geq \left\lceil \frac{n}{2} \right\rceil$$

Proof. asd □

Bibliography