

1	Introduction	1
1.1	Some Useful Notions and Notation	1
1.2	Domination and Total Domination Game	4
1.3	Bounds in Terms of the (Total) Domination Number	6
2	Domination Game	9
2.1	Continuation Principle	10
2.2	Imagination Strategy	13
2.3	Upper Bounds and the Bujtás Discharging Method	16
2.4	$\frac{3}{5}$ -Conjectures	22
2.4.1	The $\frac{3}{5}$ -Forest Conjecture	22
2.4.2	The $\frac{3}{5}$ -Graph Conjecture	24
2.4.3	An Application of the Bujtás Discharging Method	24
2.5	Domination Game on Trees	25
2.6	Exact Values of the Game Domination Number	27
2.6.1	Paths and Cycles	27
2.6.2	Powers of Cycles	28
2.6.3	Coronas	29
2.6.4	Disjoint Union of Special Graphs	29
2.6.5	Graphs with Game Domination Numbers 2 or 3	30
2.6.6	2-Connected Realizations	31
2.6.7	Some Hamming Graphs	31
2.7	$\frac{1}{2}$ -Conjectures	32
2.8	Domination Games on Subgraphs	34
2.9	Domination Game (Edge-)Critical and Stable Graphs	36
2.10	Perfect Graphs for the Domination Game	41
2.11	PLUS, MINUS, and Bluff Graphs	42
2.11.1	Bluff Graphs	43
2.12	Computational Complexity	44

3	Total Domination Game	47
3.1	Total Continuation Principle	48
3.2	Upper Bounds for General Graphs	48
3.3	$\frac{3}{4}$ -Conjecture	49
3.4	Total Domination Game on Trees	51
3.5	Exact Values of the Game Total Domination Number	54
3.5.1	Paths and Cycles	54
3.5.2	Cyclic Bipartite Graphs	55
3.5.3	Graphs Achieving the General Lower Bound	55
3.5.4	Graphs Achieving the General Upper Bound	55
3.6	Critical Graphs, Vertex Removal, and Perfect Graphs	56
3.7	Computational Complexity	60
4	Games for Staller	63
4.1	The Grundy Domination Number	64
4.2	The Grundy Total Domination Number	66
4.3	Covering Sequences in Hypergraphs	70
4.4	Uniform Dominating Sequence Graphs	71
4.5	Z-Grundy Domination and Zero Forcing	73
4.6	L-Grundy Domination	76
4.7	Comparison of the Four Grundy Domination Invariants	77
4.8	Complexity of the Grundy Domination Concepts	78
4.9	Classes of Graphs: Algorithms and Exact Values	80
5	Related Games on Graphs and Hypergraphs	83
5.1	Disjoint Domination Game	84
5.2	Fractional Domination Game	86
5.3	Connected Domination Game	89
5.4	Z-Game, L-Game, and LL-Game	91
5.5	Transversal Game in Hypergraphs	94
5.6	(Total) Domination Game in Hypergraphs	98
5.7	Additional Related Domination Games	102
5.7.1	Maker-Breaker Domination Games	102
5.7.2	Enclaveless Game	103
5.7.3	Independent Domination Game	105
5.7.4	Paired-Domination Game	106
5.7.5	The Oriented Version of the Domination Game	108
	References	109
	Author Index	115
	Subject Index	117
	Symbol Index	121