Contents

Preface vii

Chapter 1. Deterministic Games 1
1. A Very Simple Game 1
2. Rules of the Game 6
3. Heuristics and Strategies 17
4. Game Trees 26
5. A Solution for **Nim** 40
6. Theorems of Zermelo and Nash 49

Chapter 2. Player Preferences 55
1. Measurement 55
2. Ordinal Preferences 67
3. Cardinal Preferences 76
4. Ratio Scale Preferences 91

Chapter 3. Strategic Games 101
1. Tosca 101
2. Fingers and Matches 107
3. Four Solution Concepts 116
4. Once Again, Game Trees 130
5. Trees and Matrices 140

Chapter 4. Probabilistic Strategies 153
1. It's Child's Play 153
2. Mixed Strategy Solutions 160
3. Finding Solutions in 2×2 Games 176
4. Nash Equilibria in $m \times 2$ Games 189
5. Zero-Sum Games 196

Chapter 5. Strategic Game Cooperation 203
1. Experiments 203
2. The Prisoners' Dilemma 217
3. Resolving the Prisoners' Dilemma 224

Chapter 6. Negotiation and Arbitration 235
1. A Simple Negotiation 235
2. Bargaining Games 241
3. The Egalitarian Method 255
4. The Raiffa Method 269
5. The Nash Method 278

Gillman, Rick
Models of conflict and cooperation
2009

digitalisiert durch:
IDS Basel Bern

Chapter 7. Coalition Games 287
1. A Savings Allocation Problem 287
2. Two Properties and Five Methods 293
3. The Shapley Method 305
4. The Nucleolus Method 316
5. You Can't Always Get What You Want 329

Chapter 8. Fair Division 335
1. An Inheritance Problem 335
2. Fair Division Games and Methods 340
3. Fairness Properties 354
4. Choosing a Fair Method 361

Epilogue 371

Answers to Selected Exercises 377
Deterministic Games 377
Player Preferences 380
Strategic Games 381
Probabilistic Strategies 388
Strategic Game Cooperation 392
Negotiation and Arbitration 394
Coalition Games 397
Fair Division 401

Bibliography 409

Index 413