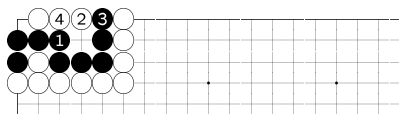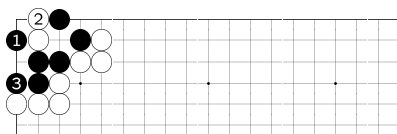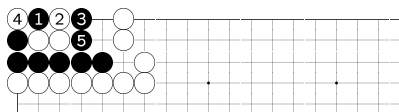# vol 1-6 tsumego

(solutions)
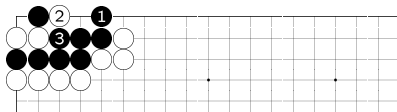
problem 1

problem 2

problem 3

problem 4
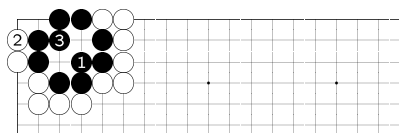
problem 5
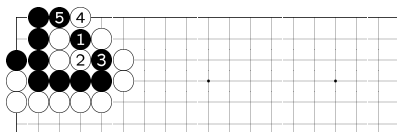
problem 6
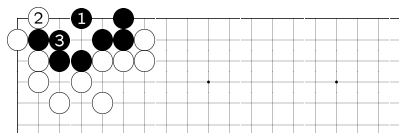
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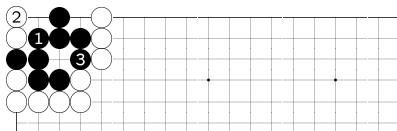
problem 8
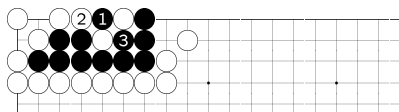
problem 9

problem 10

problem 11
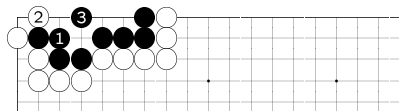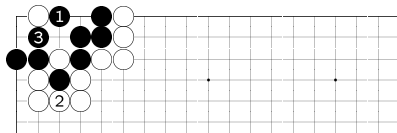
problem 12
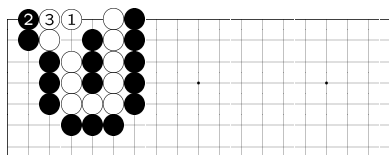
problem 13
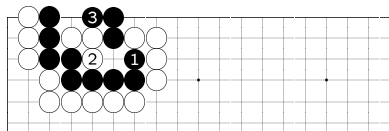
problem 14

problem 15

problem 16

problem 17

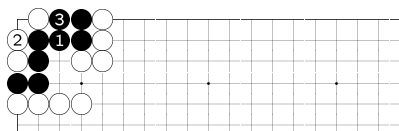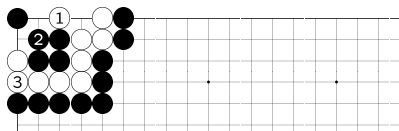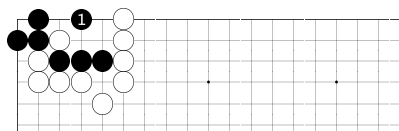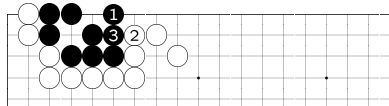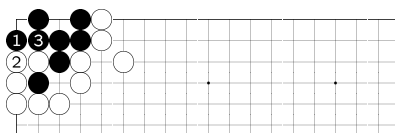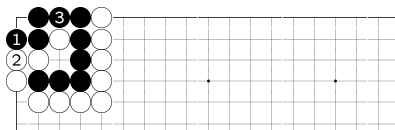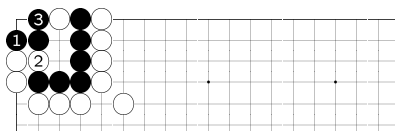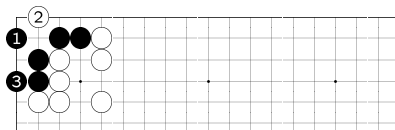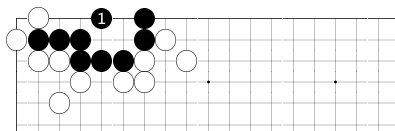

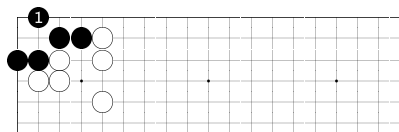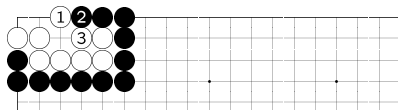*problem 18*

problem 19

problem 20

problem 21
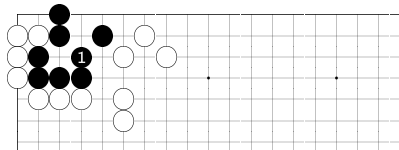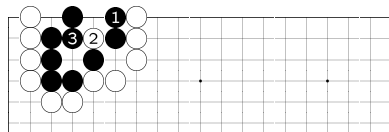

problem 22

problem 23
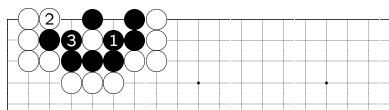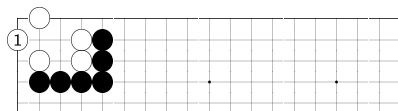

problem 24

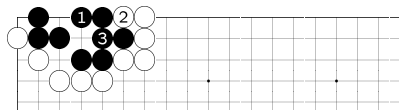*problem 25*

problem 31

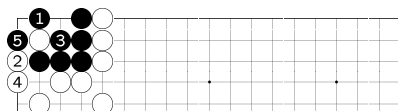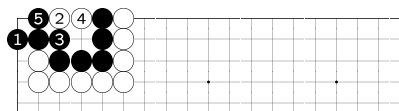
problem 26

problem 32
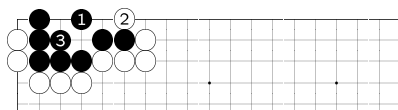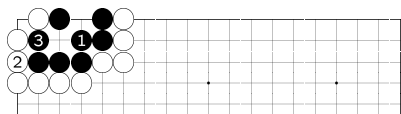

problem 27

problem 33
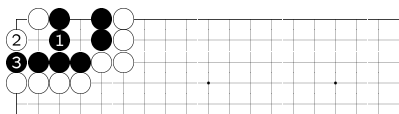

problem 28

problem 34

problem 29

problem 35

problem 30

problem 36

problem 37
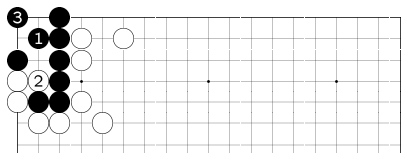
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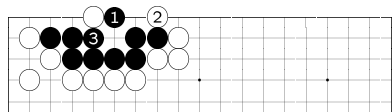
problem 39

problem 40

problem 41

problem 42

problem 43
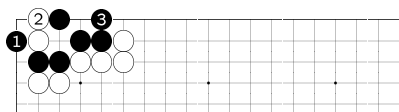
problem 44

problem 45
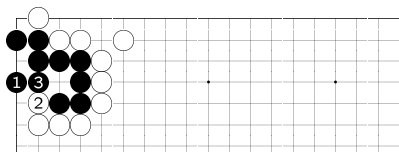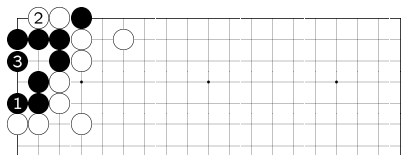
problem 46

problem 47
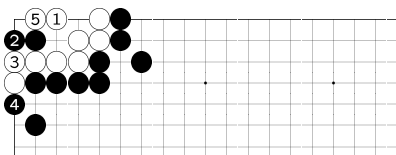
problem 48

problem 49
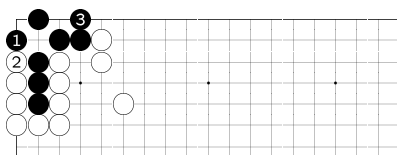
problem 55

problem 50

problem 56

problem 51

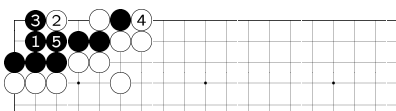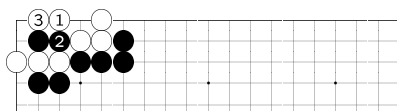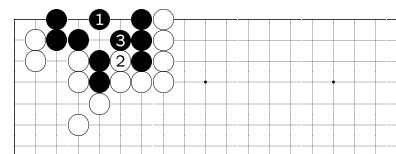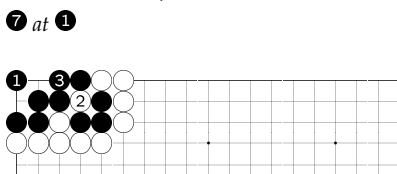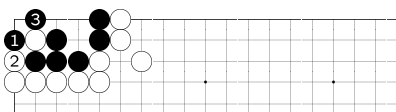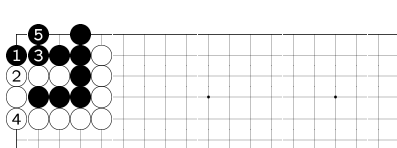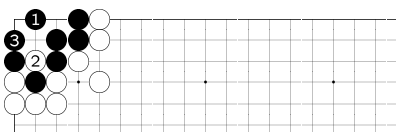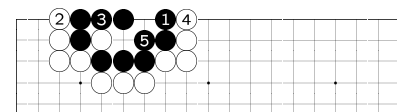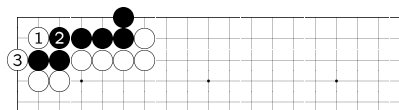*problem 57*

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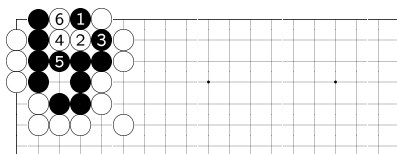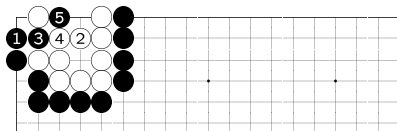

problem 52

problem 58

problem 53

problem 59

problem 54

problem 60

problem 61
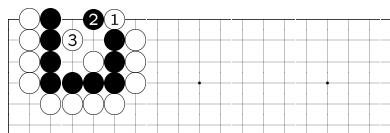
problem 62
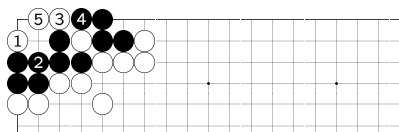
problem 63
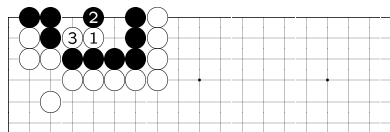
problem 64
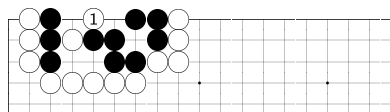
problem 65

problem 66

③ *at* ①

problem 67

problem 68
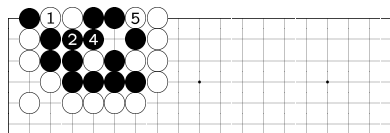
problem 69

problem 70

problem 71

problem 72
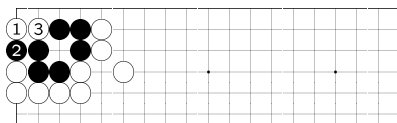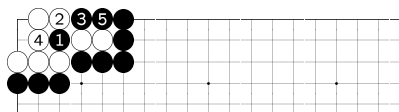
problem 73
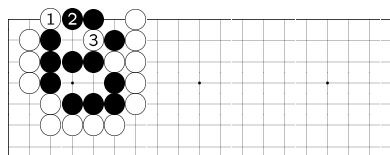
problem 74
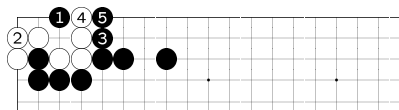
problem 75
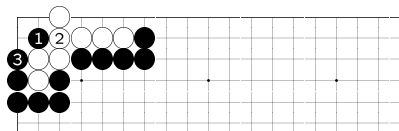
problem 76
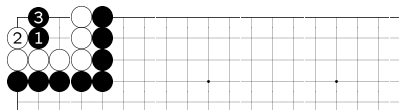
problem 77

problem 78

problem 79

problem 80

problem 81

problem 82
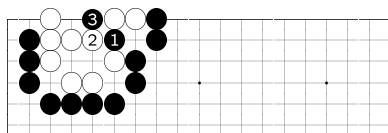
problem 83
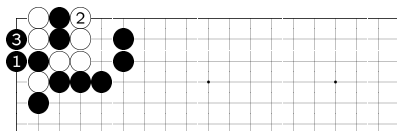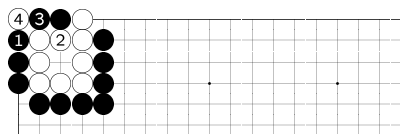
problem 84

problem 85

5 *at* **3**
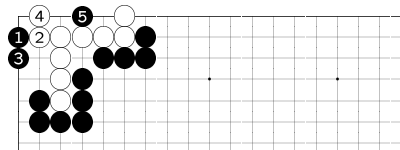
problem 86
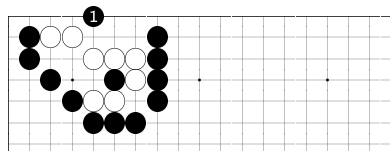
problem 87

problem 88

problem 89

problem 90

problem 91

problem 92

problem 93

problem 94

5 *at* **1**
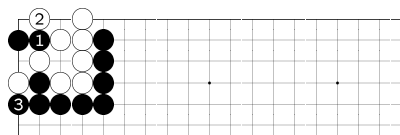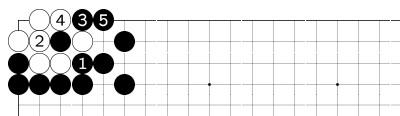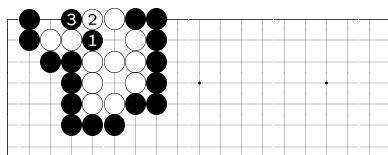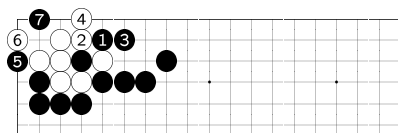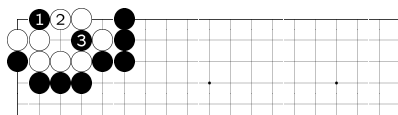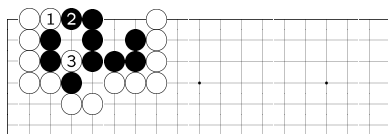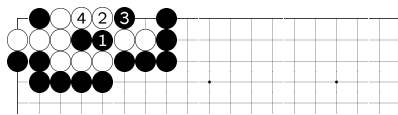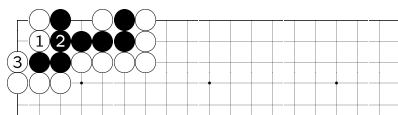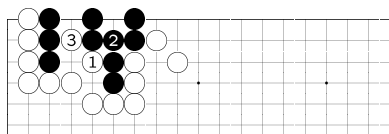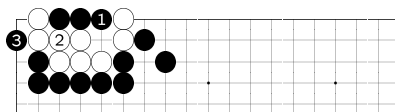
problem 95

problem 96
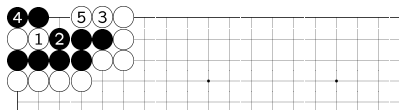
problem 97
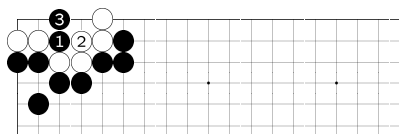
problem 98
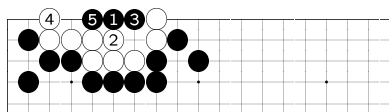
problem 99
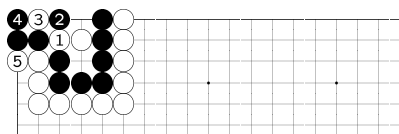
problem 100

problem 101

problem 102

problem 103

problem 104

problem 105
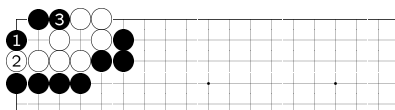
problem 106

problem 107

problem 108

problem 109

problem 110

problem 111

problem 112

❼ *at* ❸

problem 113

problem 114

problem 115

problem 116

problem 117

problem 118

problem 119

problem 120

problem 121

problem 122

problem 123

problem 124

⑤ *at* ⬤

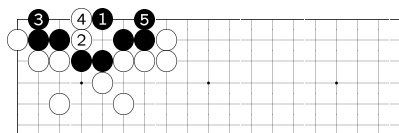*problem 125*

problem 126
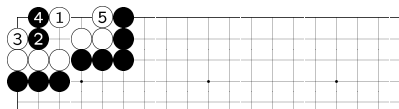

problem 127
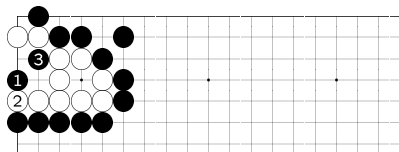
problem 128
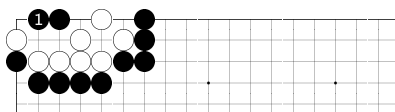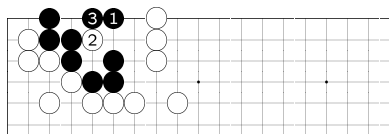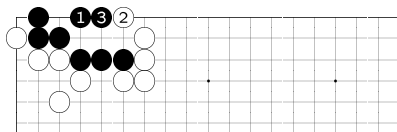

problem 129
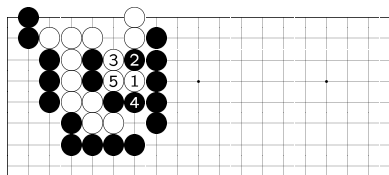
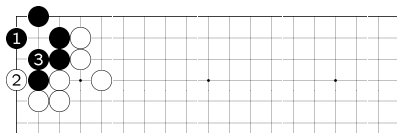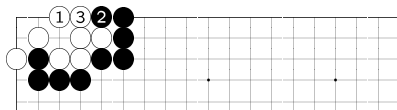*problem 130*
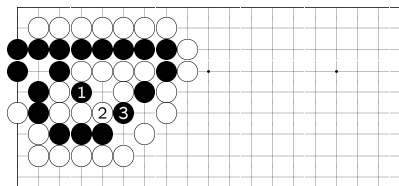
problem 131

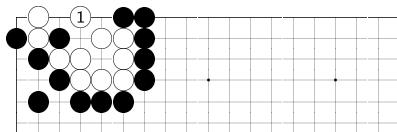*problem 132*

problem 133
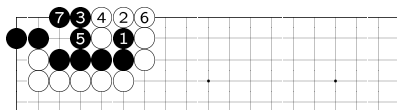

problem 134
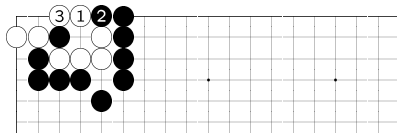

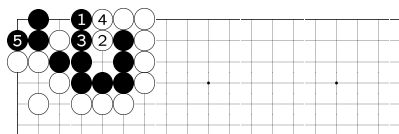*problem 135*

problem 136

problem 137
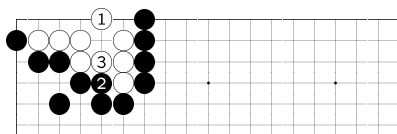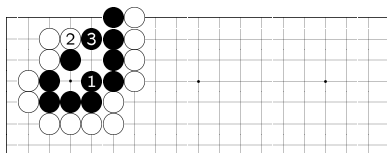

problem 138
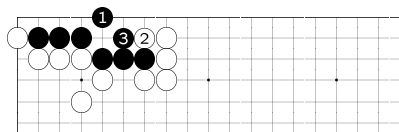

problem 139

problem 140

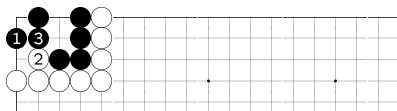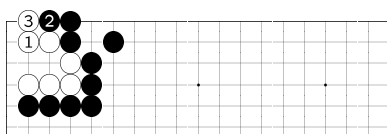*problem 141*

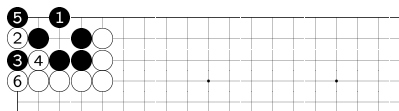*problem 142*

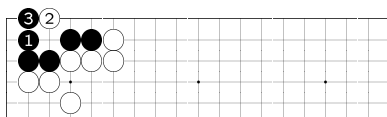*problem 148*

problem 143

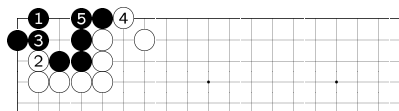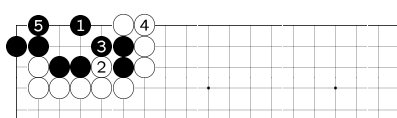*problem 149*

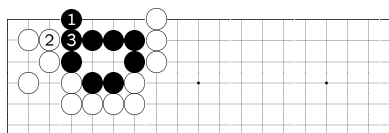*problem 144*

problem 150

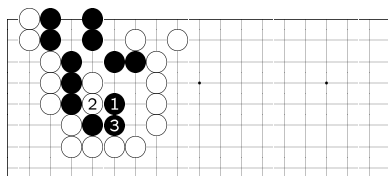*problem 145*

problem 151

problem 146

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problem 152

problem 147

problem 153

problem 154
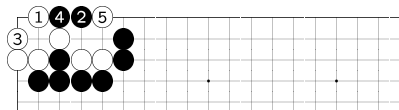
problem 155
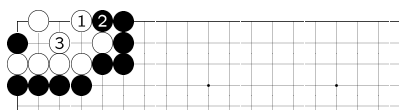
problem 156

problem 157
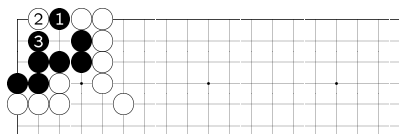
problem 158
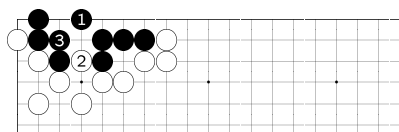
problem 159

problem 160

problem 161

problem 162

④ *at* ②, ⑥ *at* ▲, ⑦ *at* △

problem 163

problem 164
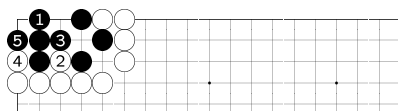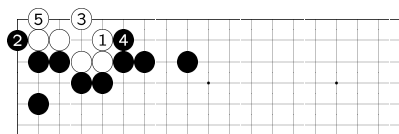
problem 165

problem 166

problem 167
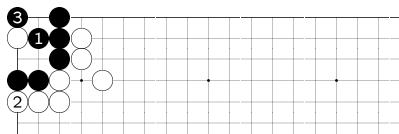
problem 168
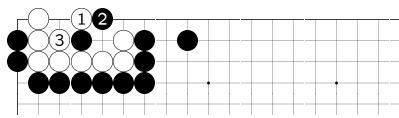
problem 169
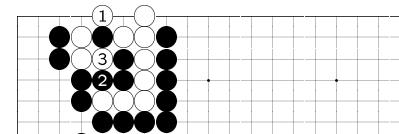
problem 170

problem 171

problem 172
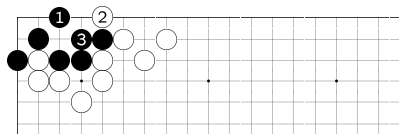

problem 173

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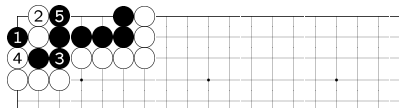
problem 174

problem 175

problem 176
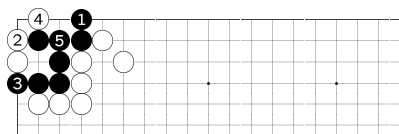
problem 177
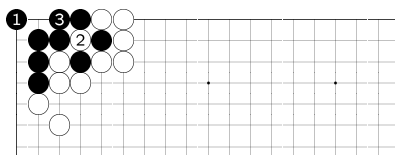
problem 182

problem 178

problem 183

problem 179

problem 184

problem 180

problem 185

problem 181

problem 186

problem 187

problem 188

problem 189
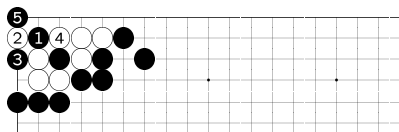
problem 190
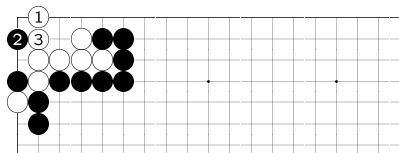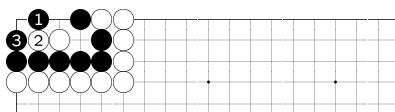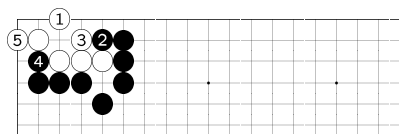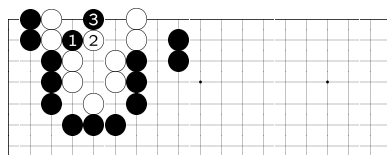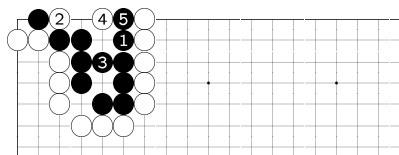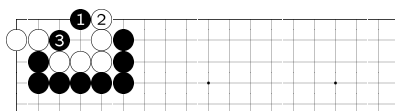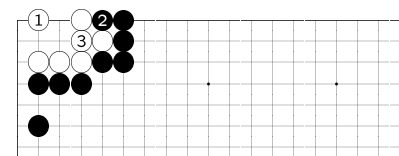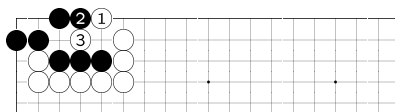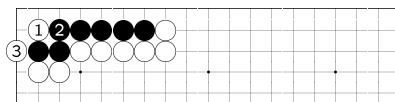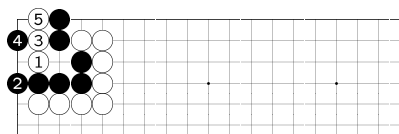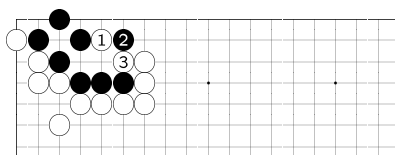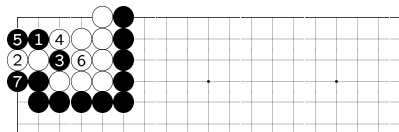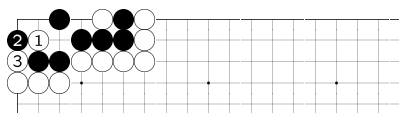

problem 191
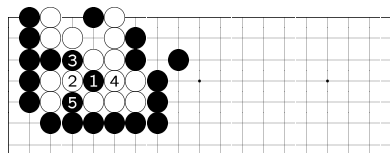
problem 192

problem 193

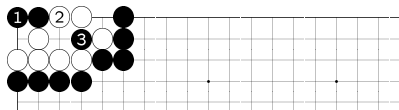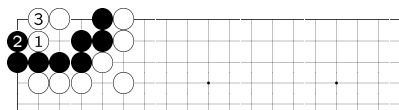*problem 194*

problem 195
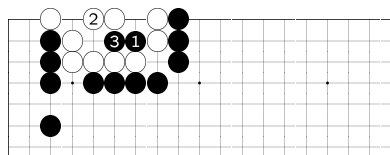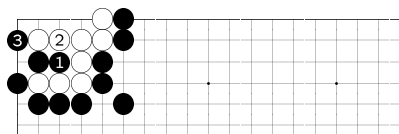

problem 196
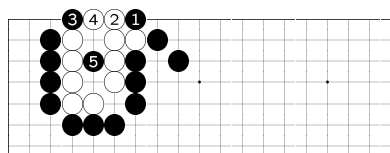
problem 197
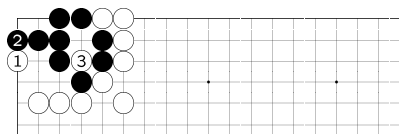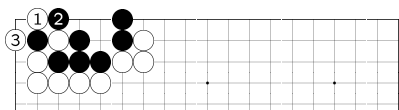

problem 198
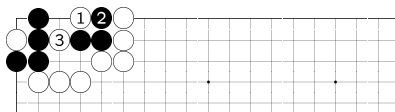
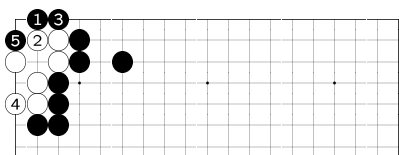*problem 199*
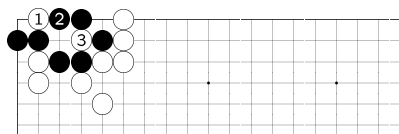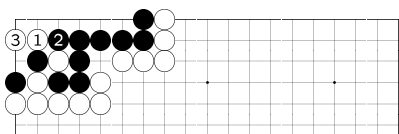
problem 200

problem 201
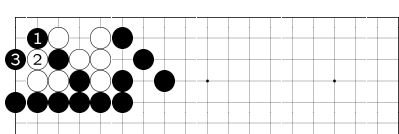
problem 202

problem 203

problem 204

problem 205

problem 206

problem 207

problem 208

problem 209

problem 210
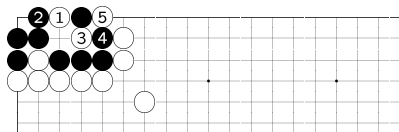
problem 211

problem 212

problem 213

problem 214

problem 215

problem 216
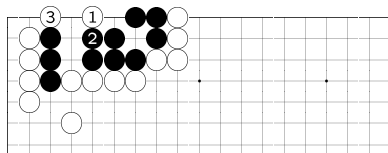
problem 217
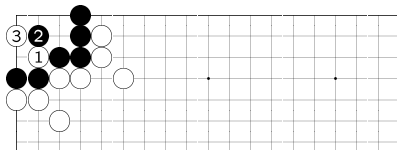
problem 218

problem 219
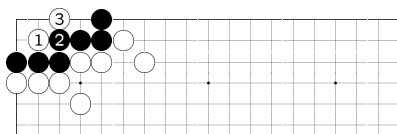
problem 220
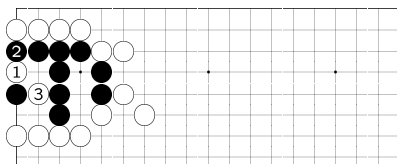
problem 221
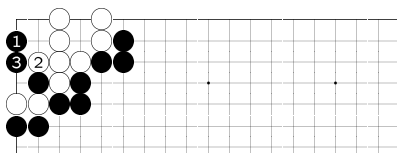
problem 222
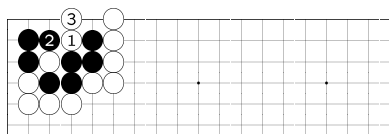
problem 223
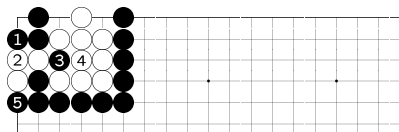
problem 224
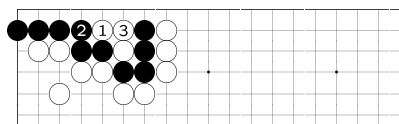
problem 225
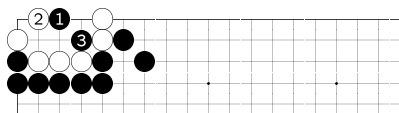
problem 226
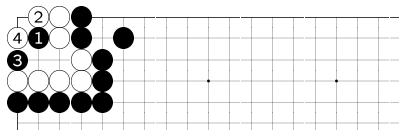
problem 227
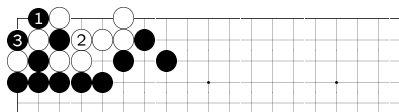
problem 228

problem 229

problem 230

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problem 231

problem 232

problem 233
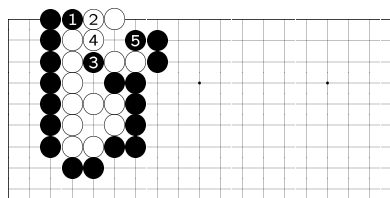
problem 234
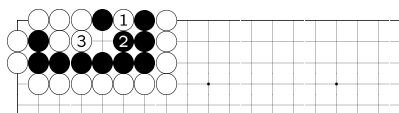
problem 235
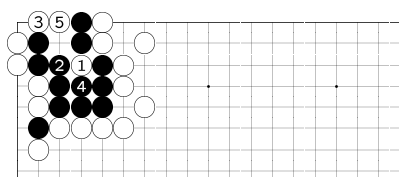
problem 236
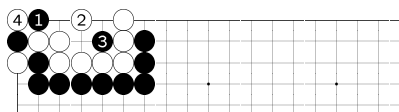
problem 237
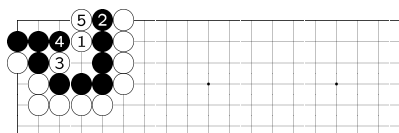
problem 238

problem 239

problem 240

problem 241

problem 242

problem 243

problem 244

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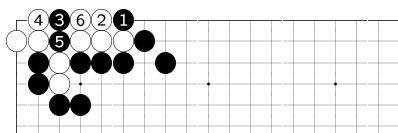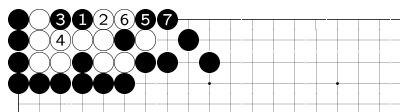
problem 245
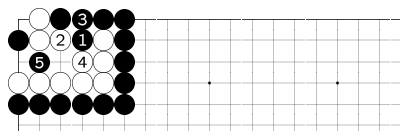
problem 246
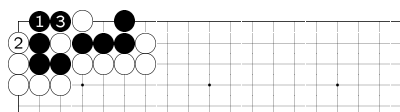
problem 247

problem 248

problem 249

problem 250

problem 251

problem 252
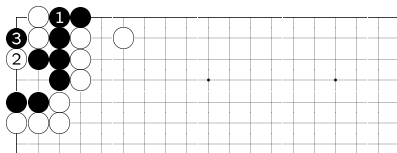
problem 253
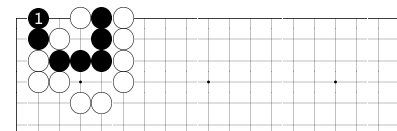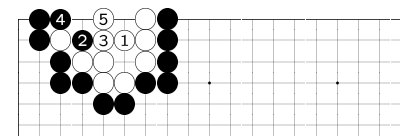
problem 254

problem 255
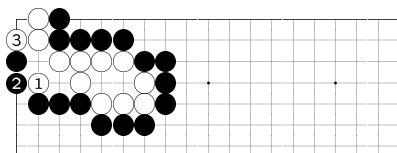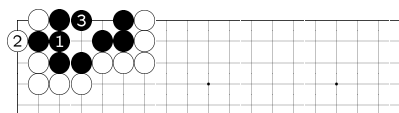
problem 256

problem 257

problem 258

problem 259

problem 260

problem 261

problem 262

problem 263

problem 264

problem 265
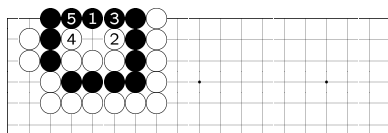
problem 266
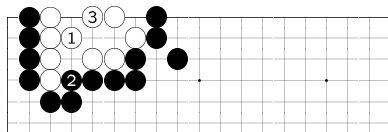
problem 267

problem 268

problem 269

problem 275

problem 270

problem 276

problem 271

problem 277

problem 272

problem 278

problem 273

problem 279

problem 274

⑦ *at* ◯
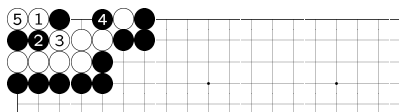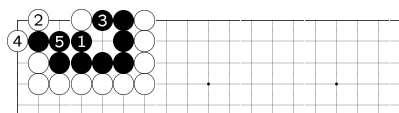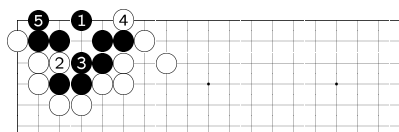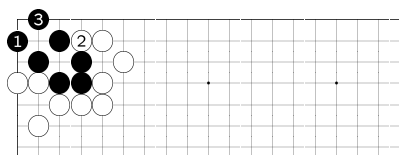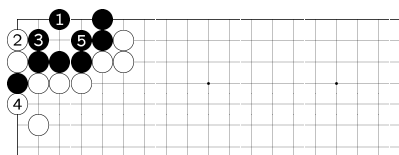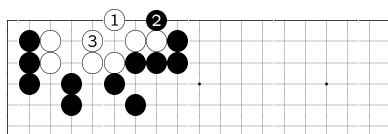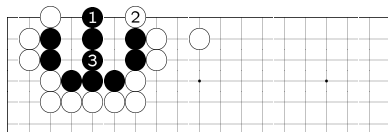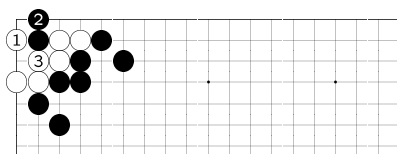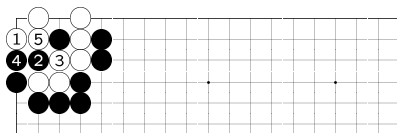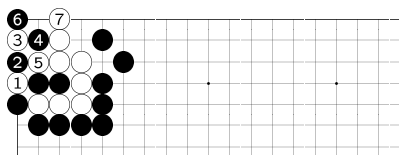
problem 280
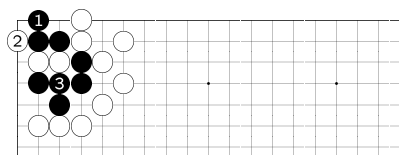
problem 281

problem 282
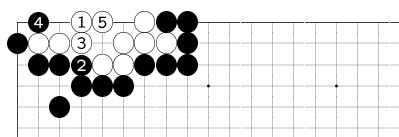
problem 283
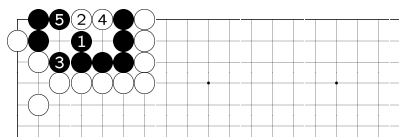
problem 284
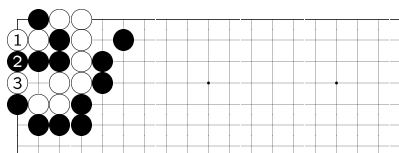
problem 285

problem 286

problem 287

problem 288

⑤ *at* ◎

problem 289
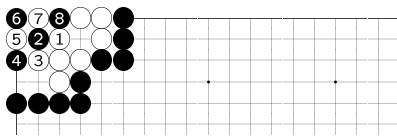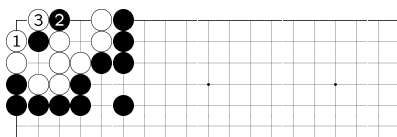
problem 290

problem 291
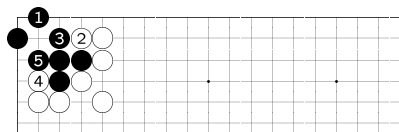
problem 292
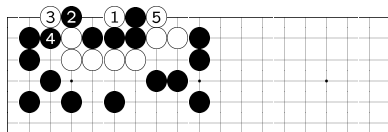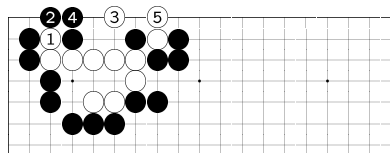
problem 293

problem 294
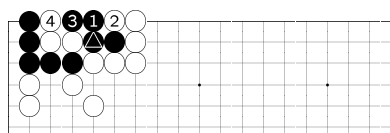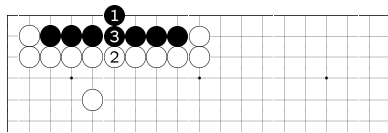
❺ *at* ▲

problem 295

❻ *at* ❹, ❽ *at* ❷, ⑨ *at* △

problem 296

problem 297

problem 298

❺ *at* ▲
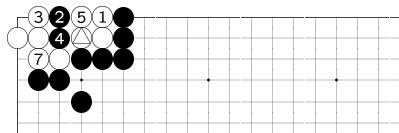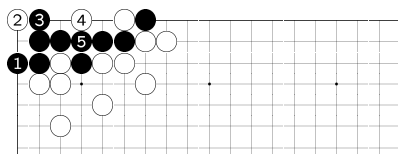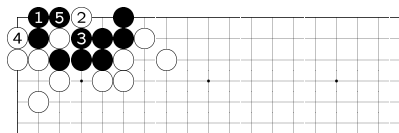
problem 299
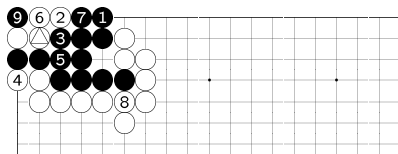
problem 300

problem 301

⑩ *at* ⑥, ⓫ *at* △
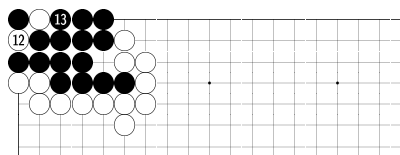
Diagram 2: 12-13

problem 302

problem 303

problem 304

problem 305

problem 306

problem 307

problem 308

problem 309

problem 310

problem 311

problem 312

3 *at* ▲
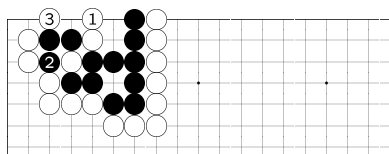
problem 313
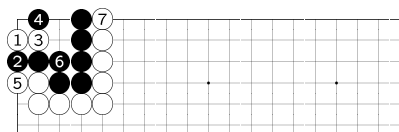
problem 314

problem 315
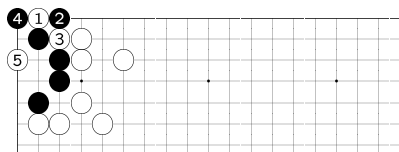
problem 316

problem 317

problem 318

problem 319

problem 320

problem 321

problem 322

problem 323

⑤ *at* ③

problem 324

problem 325

problem 326

problem 327

problem 328

problem 329

problem 330
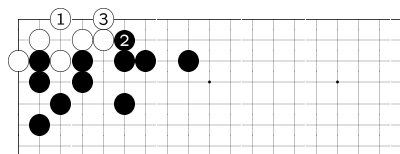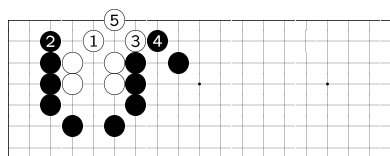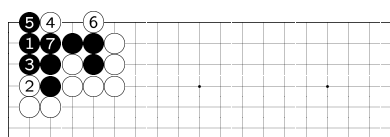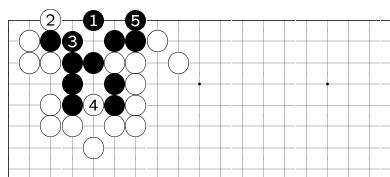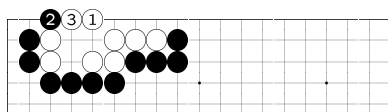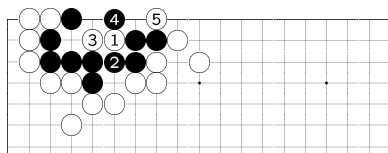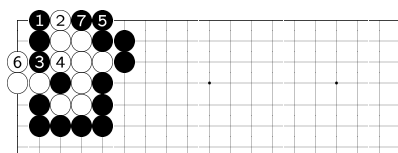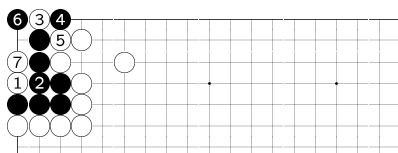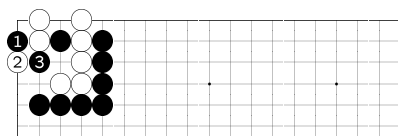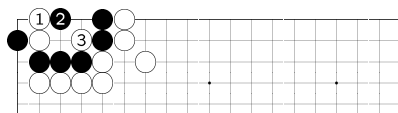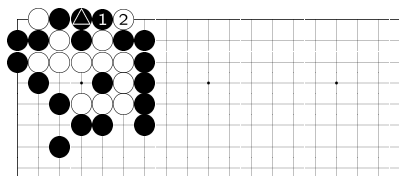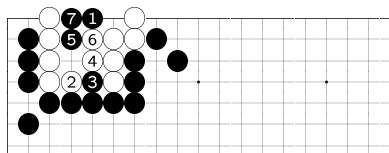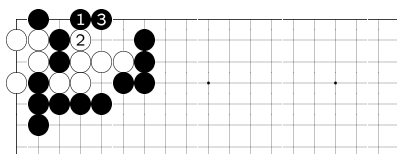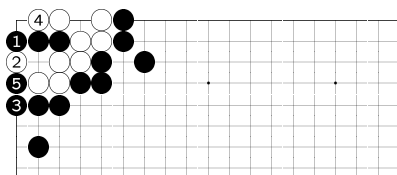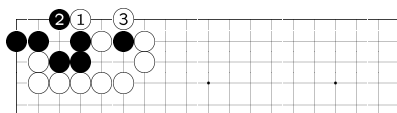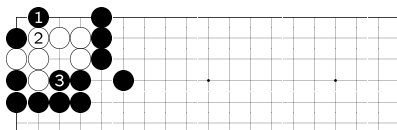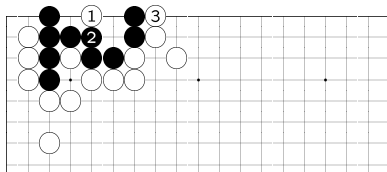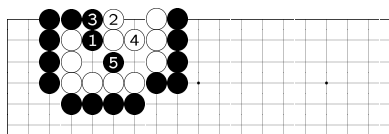
❸ *at* ❶

problem 331

problem 332

problem 333

problem 334
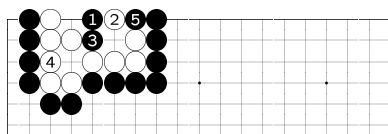
problem 335
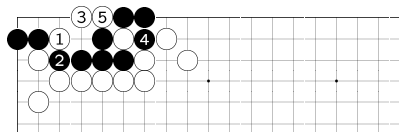
problem 341

problem 336

problem 342

problem 337

problem 343

problem 338

problem 344

problem 339

problem 345

problem 340

problem 346

problem 347

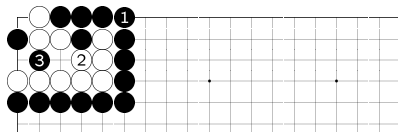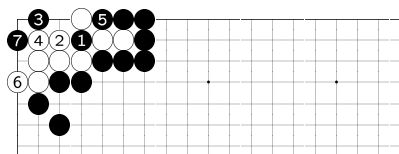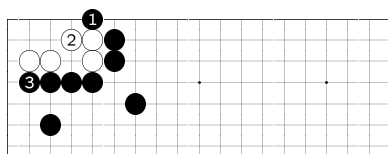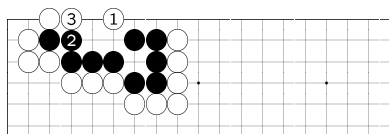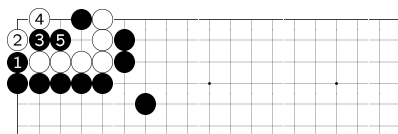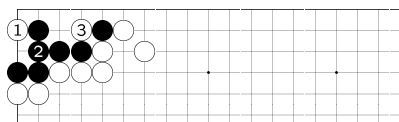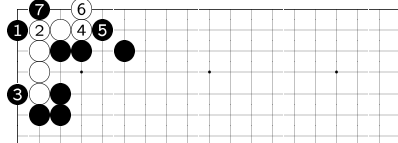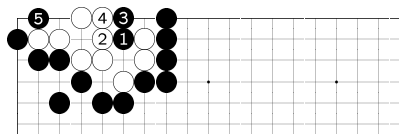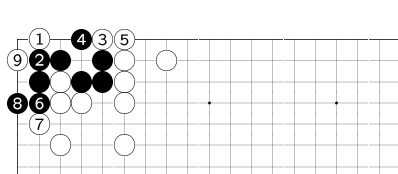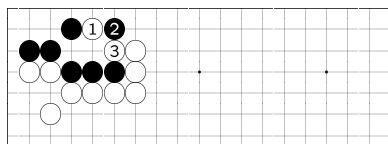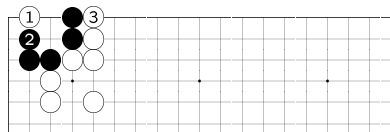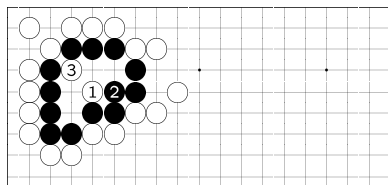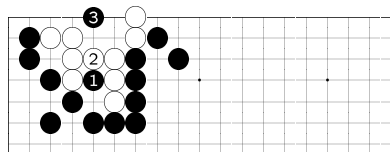*problem 348*

problem 349

problem 350

problem 351

problem 352

problem 353
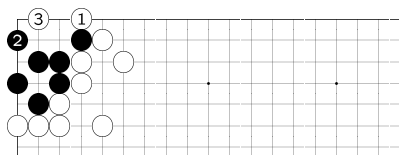
problem 354
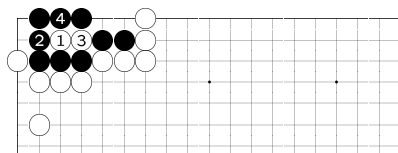
problem 355

⑤ *at* ③

problem 356

⑤ *at* ③

problem 357

❸ *at* ⬤
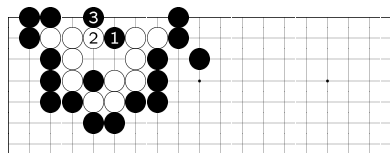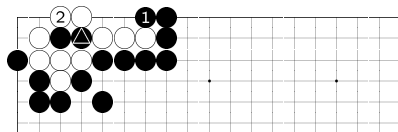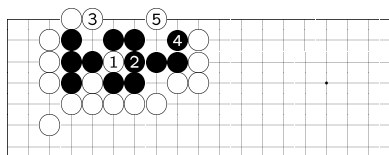
problem 358

problem 359

❼ *at* ❺

problem 360

❺ *at* ❸, ⑥ *at* ❶
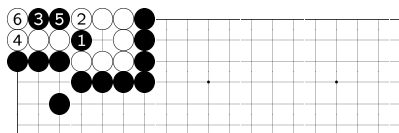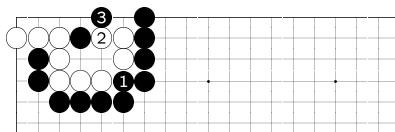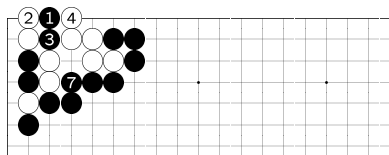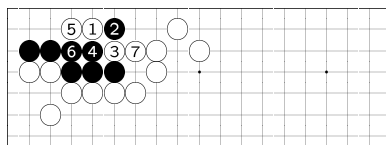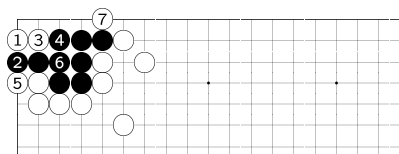
problem 361
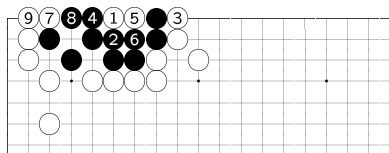
problem 362

problem 363

⑦ *at* △

problem 364

problem 365

problem 366
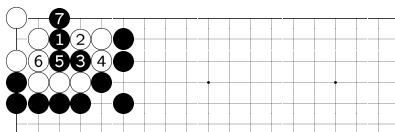
problem 367

problem 368

⑨ at ③, ❿ at ①, ⑪ at ⑦

problem 369

❸ at ⬤

problem 370

problem 371
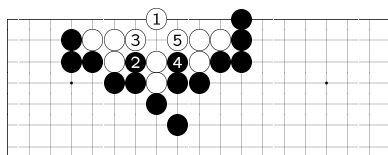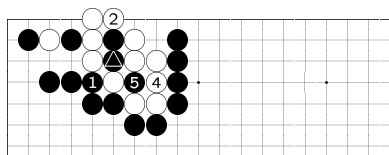
problem 372

problem 373

problem 374
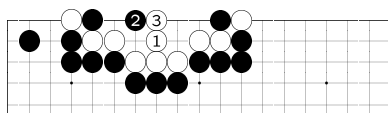
problem 375
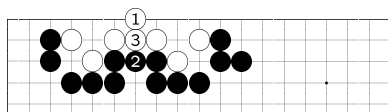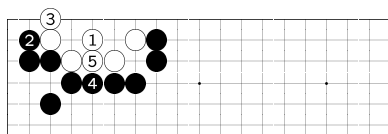
problem 376

problem 377

problem 378

problem 379

problem 385

problem 380

problem 386

problem 381

problem 387

problem 382

problem 388
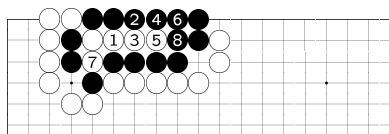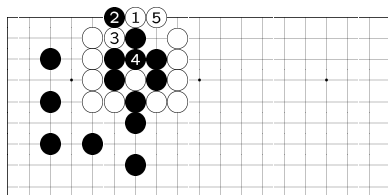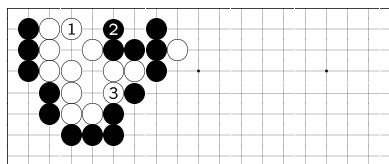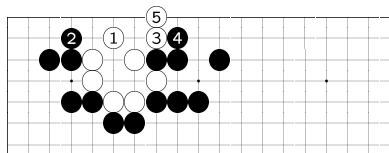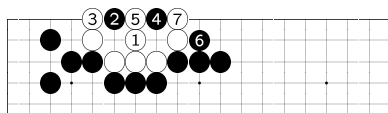

problem 383

problem 389

problem 384
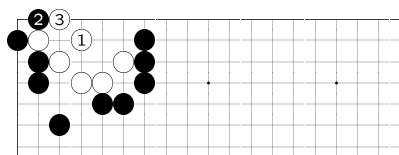
problem 390

problem 391
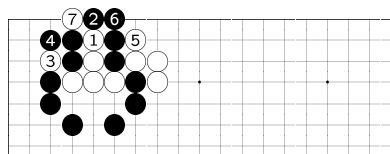
problem 396

problem 392
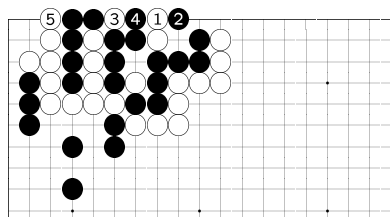
problem 397

problem 393

problem 398

❻ *at* ③
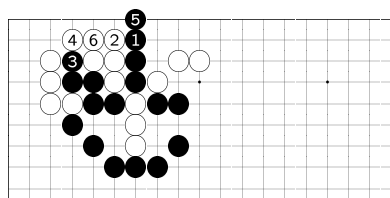
problem 394

problem 399

⑧ *at* ❶
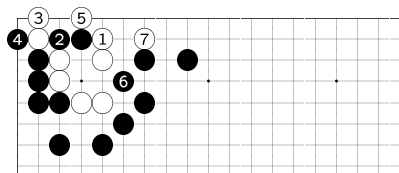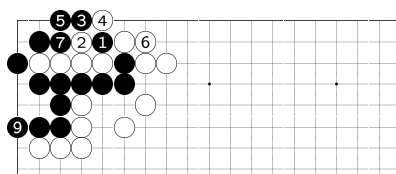
problem 395
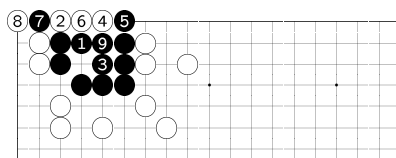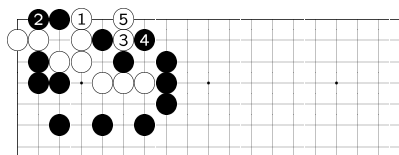
problem 400
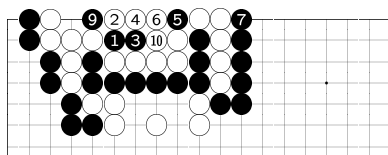
problem 401
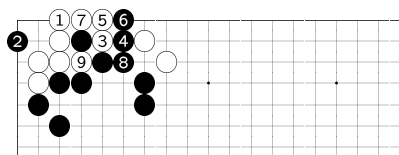
problem 402
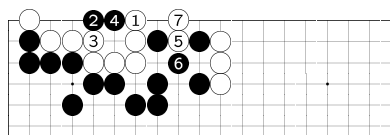
problem 403
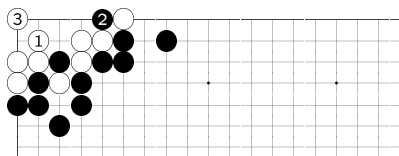
problem 404
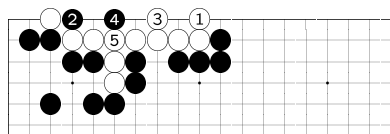
problem 405

problem 406

⑧ *at* ❺, ⓫ *at* ❶

problem 407

problem 408

❽ *at* ⑤, ⓫ *at* ①

problem 409
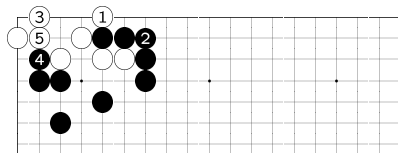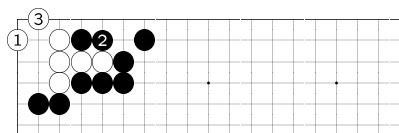
problem 410

problem 411

problem 416

problem 412

problem 417

problem 413

problem 418

⑤ *at* ⬭
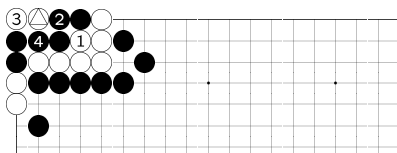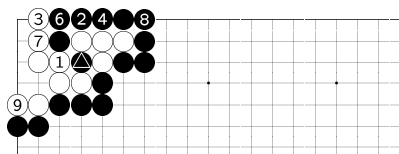
problem 414
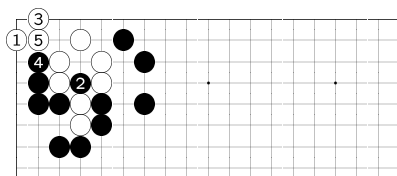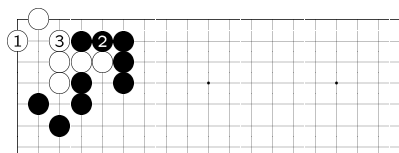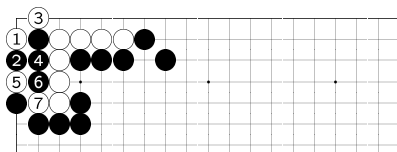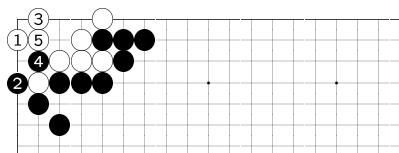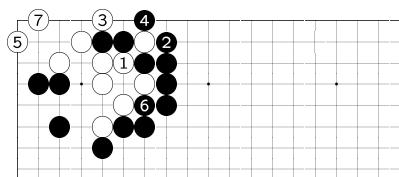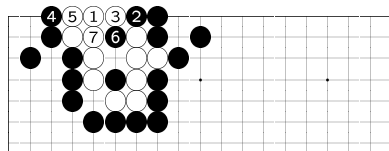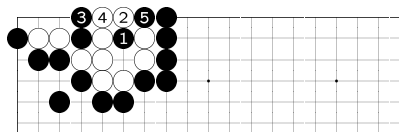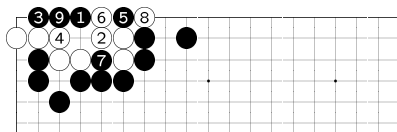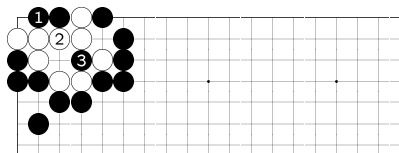
⑤ *at* ⬢
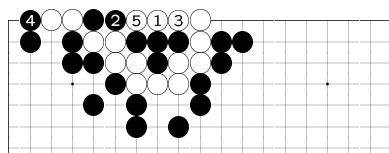
problem 419

problem 415

problem 420

problem 421

problem 422
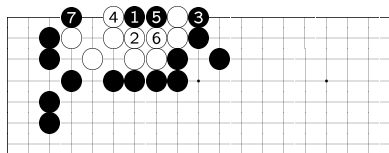
problem 423
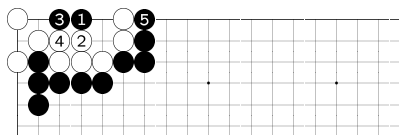
problem 424
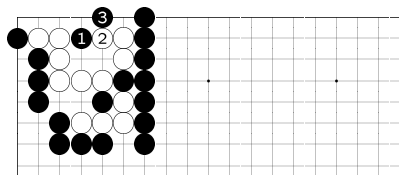
problem 425

problem 426

problem 427

problem 428

⑧ *at* ❸

problem 429

problem 430
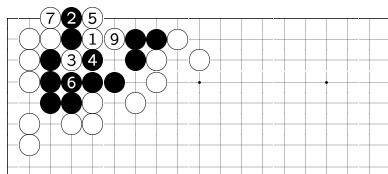
❽ *at* ③
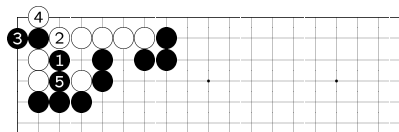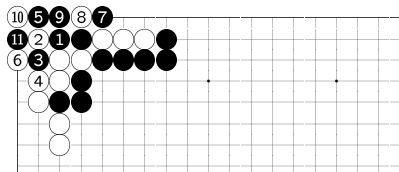
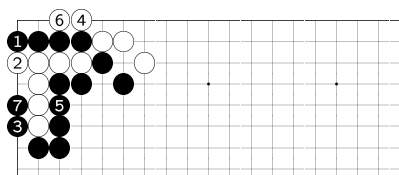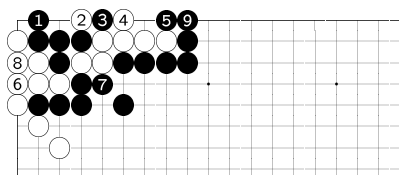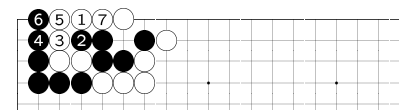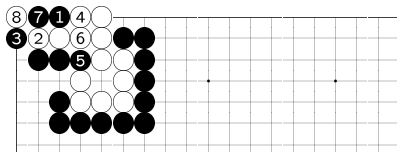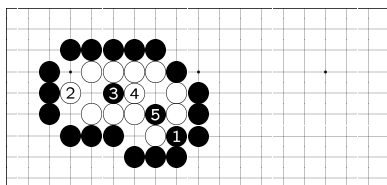*problem 431*

problem 432

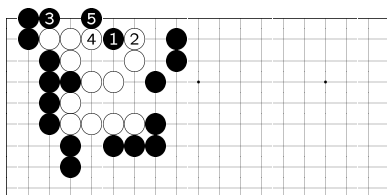

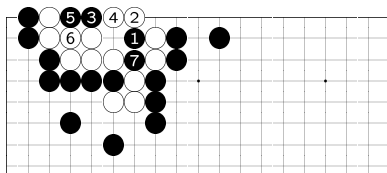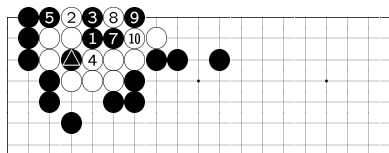*problem 433*

problem 434
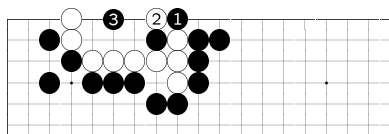

problem 435

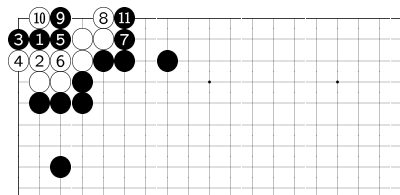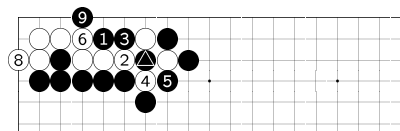*problem 436*

❾ *at* ❼

problem 437

problem 438

problem 439

problem 440

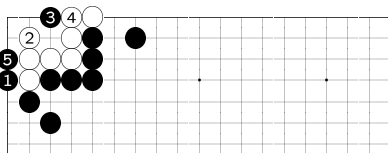⑥ *at* ⬤, ⓫ *at* ⑧

problem 441

problem 442

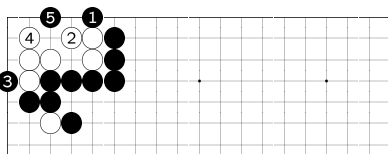

problem 443

❼ *at* ⬤
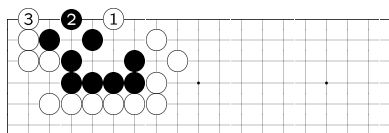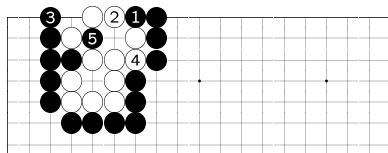
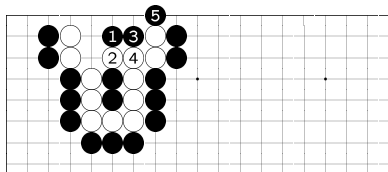

problem 444

problem 445

problem 446
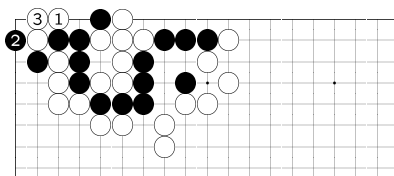

problem 447

problem 448

⑫ *at* ❺

problem 449

❺ *at* ❸, ⑥ *at* ❶
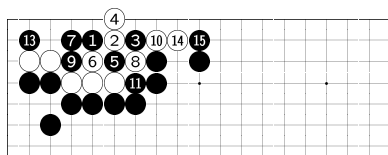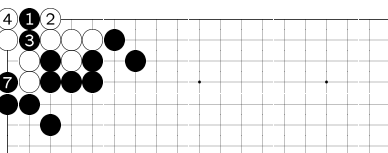
problem 450

problem 451
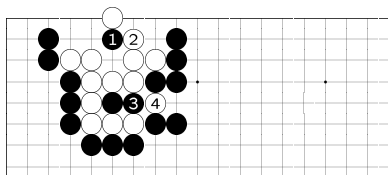
5 *at* **3**

problem 452
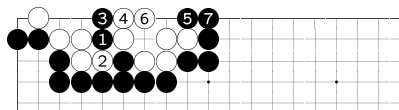
problem 453

problem 454

7 *at* **3**

problem 455

problem 456

7 *at* **3**

problem 457

problem 458

problem 459
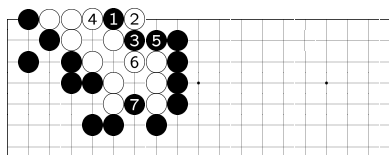
problem 460
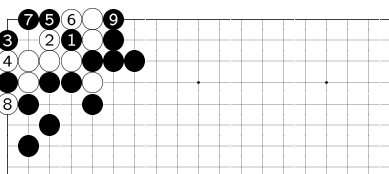
problem 461

problem 462

problem 463

problem 464

problem 465

problem 466

problem 467

problem 468

problem 469

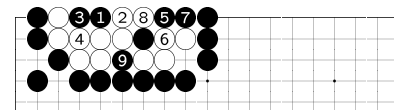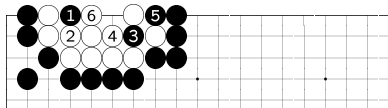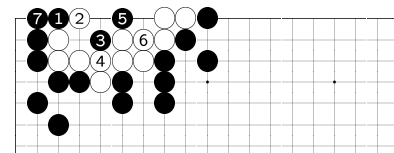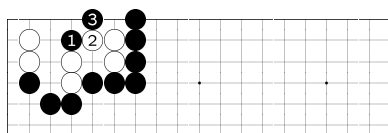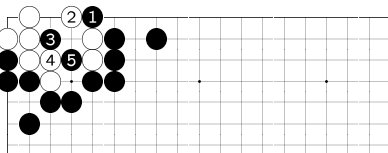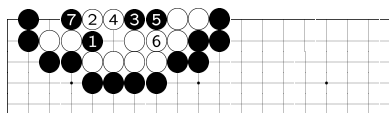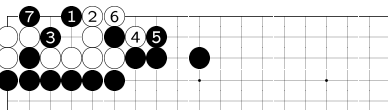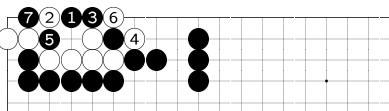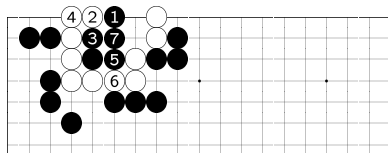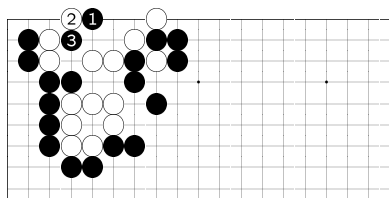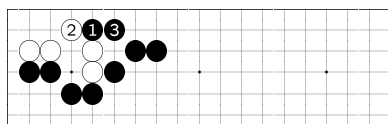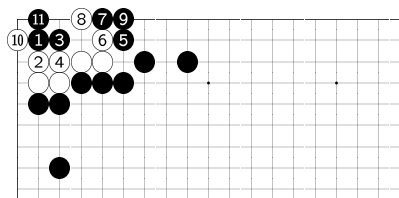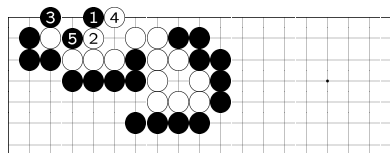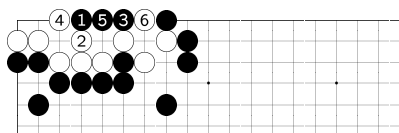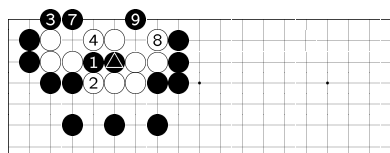problem 470

problem 475

problem 471

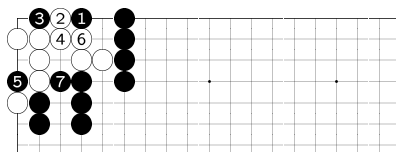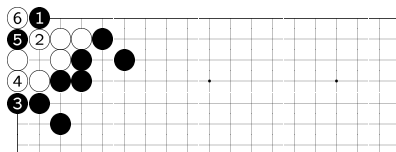problem 476

problem 472
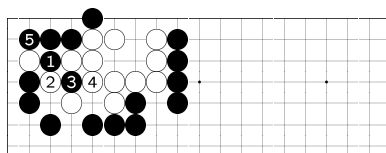
problem 477
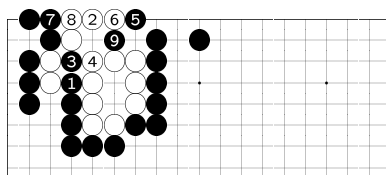
problem 473

problem 478

problem 474
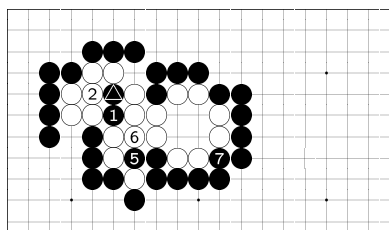
problem 479

problem 480

③ *at* **①** *,* ④ *at* ▲

problem 481

problem 482
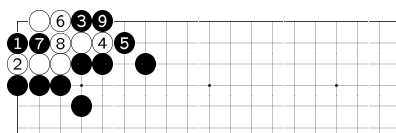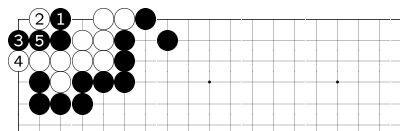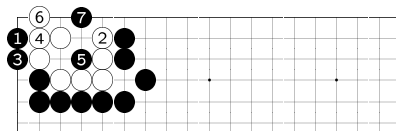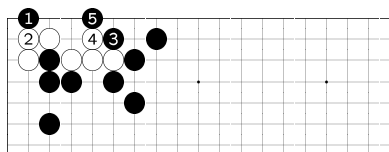
problem 483
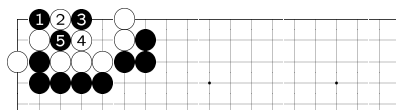
problem 484
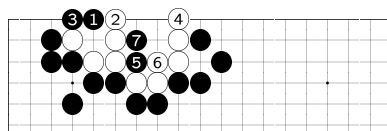
problem 485

problem 486

problem 487

problem 488
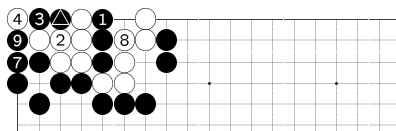
problem 489

⑤ *at* **③** *,* ⑥ *at* ▲
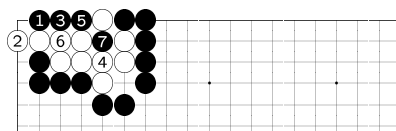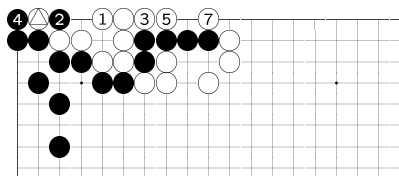
problem 490

problem 491

6 *at* ◯
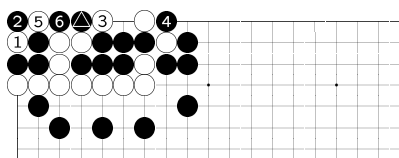
problem 492

⑦ *at* ⑤, **8** *at* **6**, ⑨ *at* ⬤
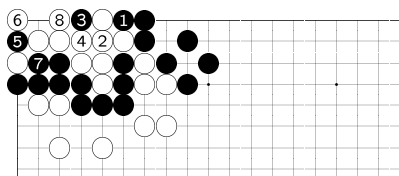
problem 493

9 *at* **5**
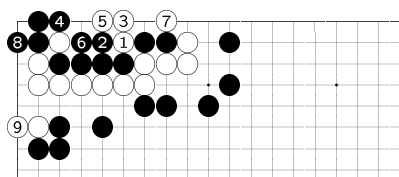
problem 494
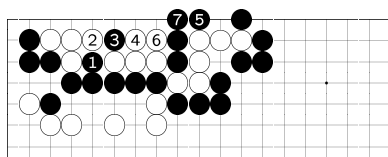
problem 495

problem 496

problem 497

problem 498

problem 499

problem 500

problem 501
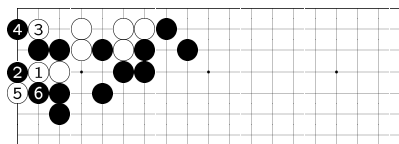
problem 502
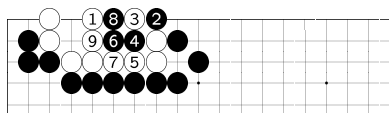
problem 503
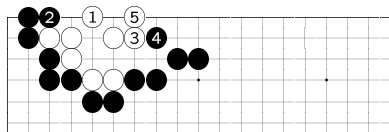
problem 504

problem 505

problem 506

problem 507

problem 508
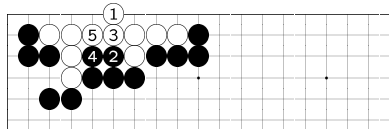
problem 509
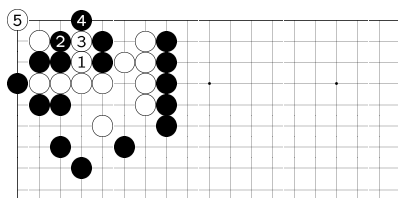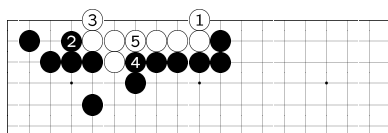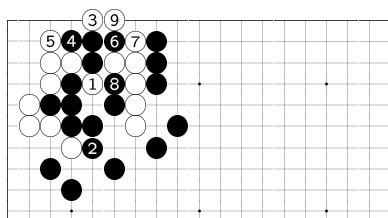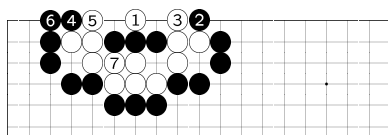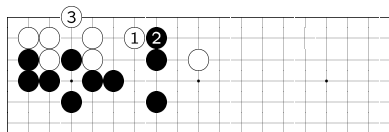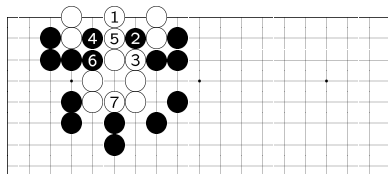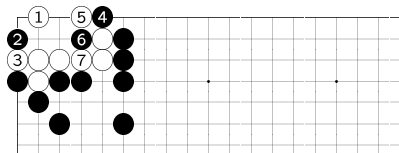
problem 510
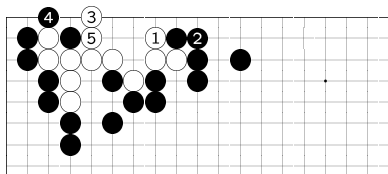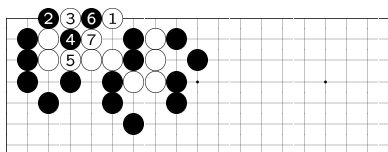
problem 511

problem 512
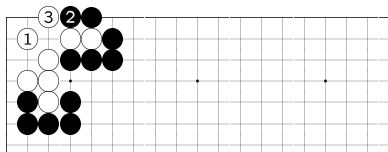
problem 513
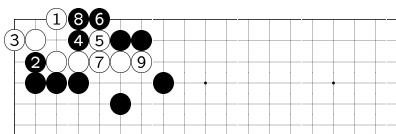
problem 514
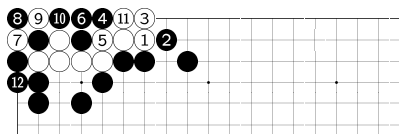
problem 515

⑬ *at* ⑨
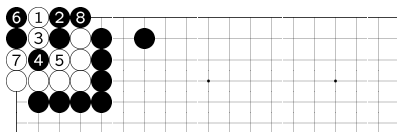
problem 516

⑨ *at* ③
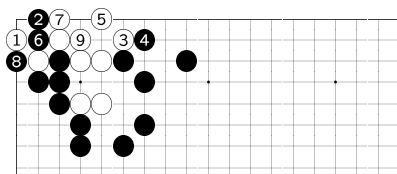
problem 517

problem 518

problem 519

problem 520

problem 521

problem 522

problem 523

❻ *at* ❹, ❽ *at* ❷, ⑨ *at* △

problem 524

❽ *at* ❻, ❿ *at* ❹, ⑪ *at* △

problem 525

③ *at* △, ❽ *at* ❻, ❿ *at* ❹, ⑪ *at* △

problem 526

❽ *at* ❻, ❿ *at* ❹, ⑪ *at* △

problem 527

❹ *at* △, ⑦ *at* △

problem 528

❻ *at* △

problem 529

problem 530

problem 531

problem 532

problem 533

⑦ *at* ⑤, ❽ *at* ①

problem 534

problem 535

problem 536

problem 537

problem 538

problem 539

❻ *at* ❷, ⑪ *at* ①
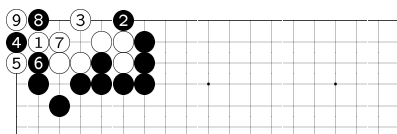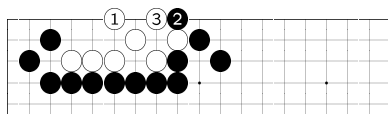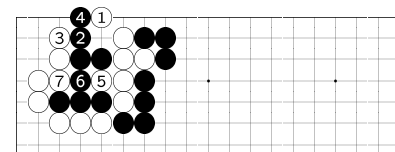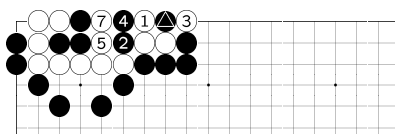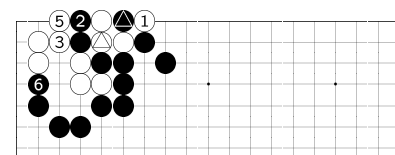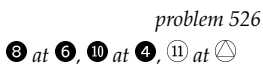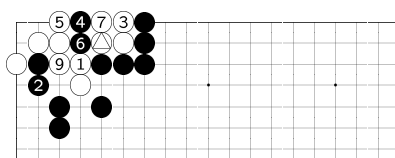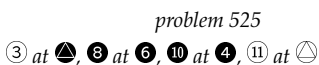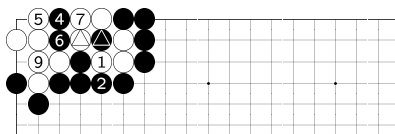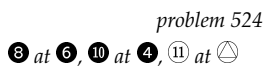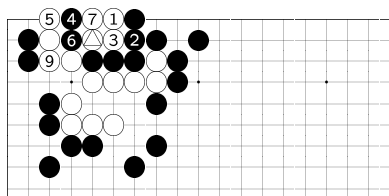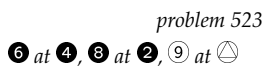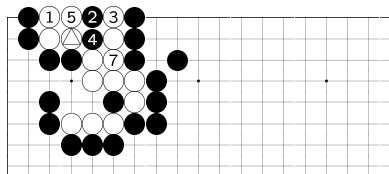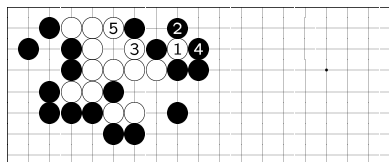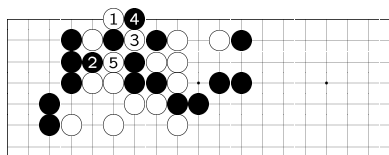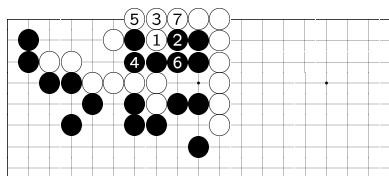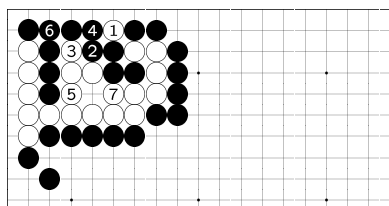
problem 540

problem 541
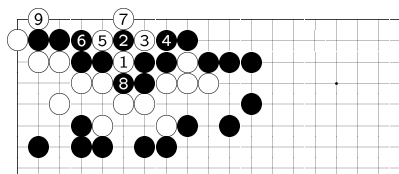
problem 542
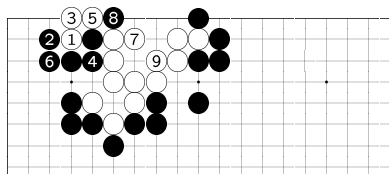
problem 543
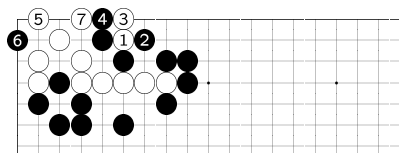
problem 544

problem 545

problem 546

problem 547

problem 548
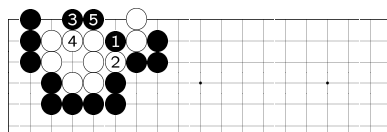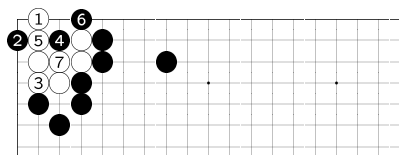
problem 549

problem 550

problem 551
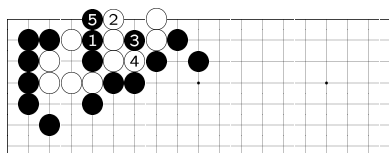
problem 552
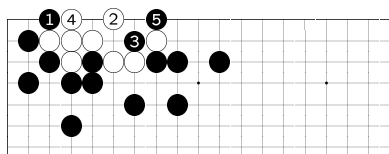
problem 553
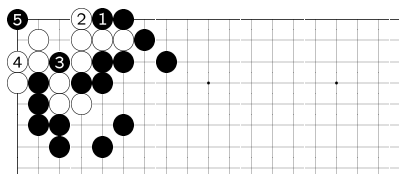
problem 554

problem 555

problem 556

problem 557

problem 558
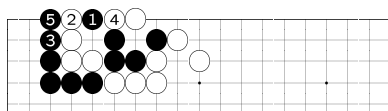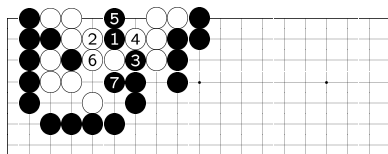
problem 559

problem 560

problem 561

⓫ *at* ❼
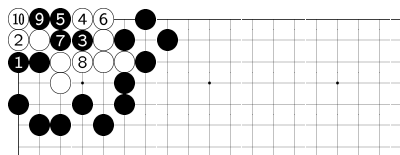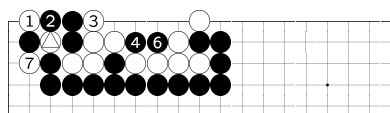
problem 562

⑤ *at* △
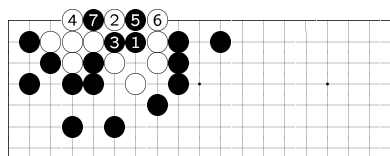
problem 563

problem 564

❾ *at* ❺
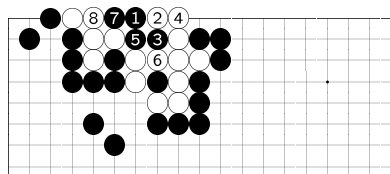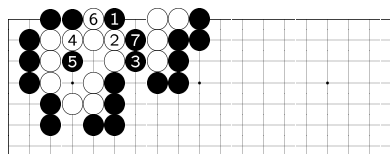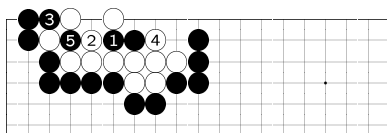
problem 565

problem 566

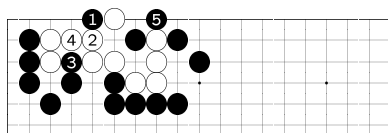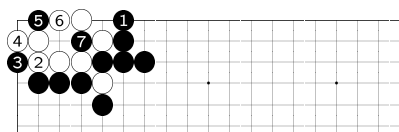*problem 567*

problem 568

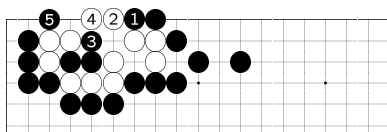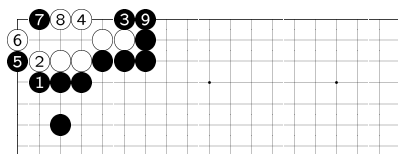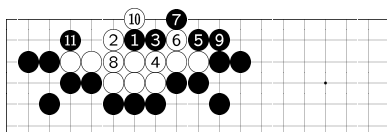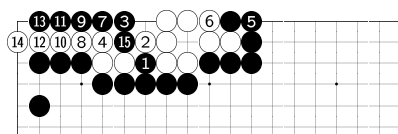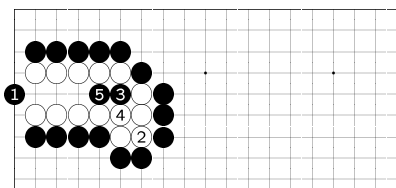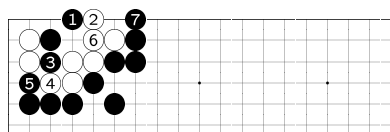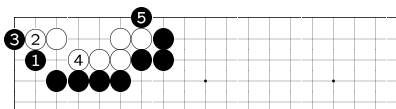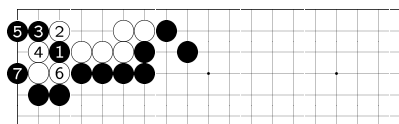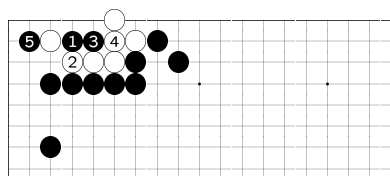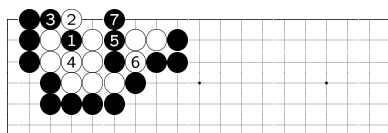*problem 569*

problem 570
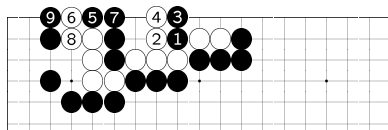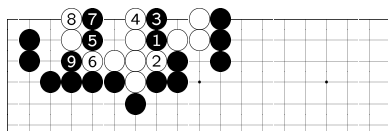
problem 571

problem 572
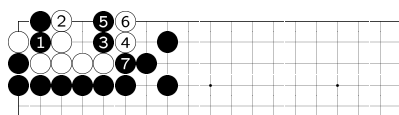

problem 573

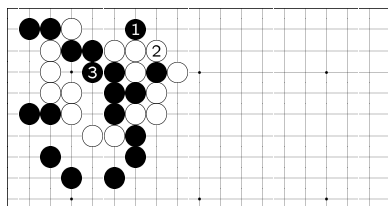*problem 574*

problem 575

problem 576

problem 577

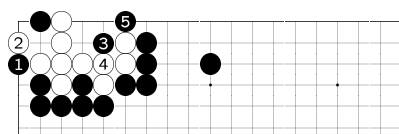*problem 578*

problem 579

problem 580

problem 581
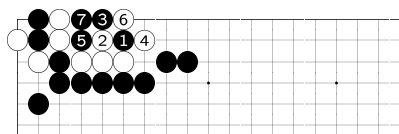
problem 582
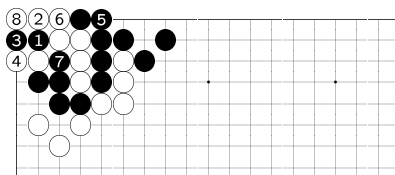

problem 583

9 *at* **5**

problem 584

problem 585

11 *at* **5**, ⑫ *at* **7**

problem 586

9 *at* **5**, **11** *at* **1**, ⑫ *at* **3**

problem 587

⑥, ⑧ *at* ④, **7** *at* △, **9** *at* ▲

problem 588

9 *at* **1**, ⑩ *at* **3**
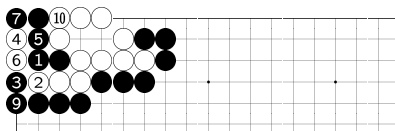
problem 589

⑧, ⑫ *at* ⑥, **11** *at* ④, **13** *at* **1**
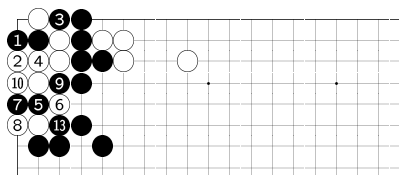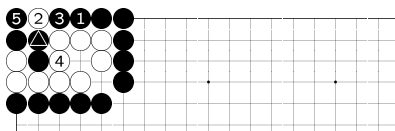
problem 590

⑥ *at* ②, **7** *at* ▲
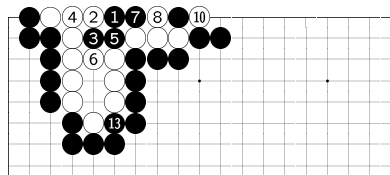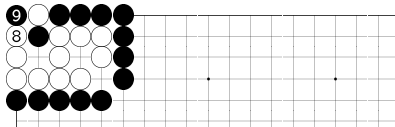
Diagram 2: 8-9

problem 591
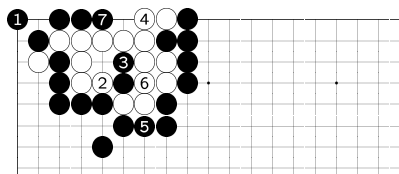
problem 592

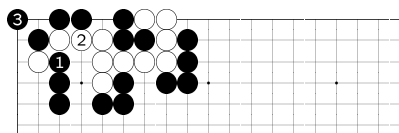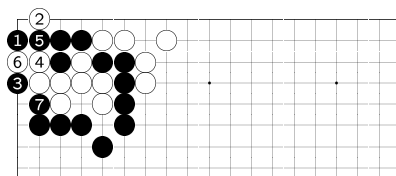*problem 593*
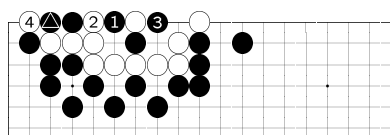
❺ *at* ▲

problem 594

problem 595

problem 596

problem 597

problem 598

problem 599

⑥ *at* ❸
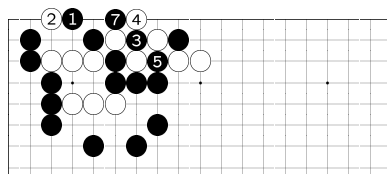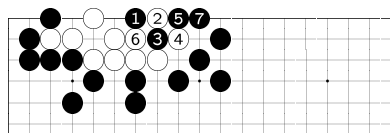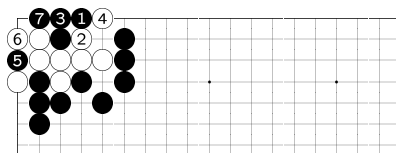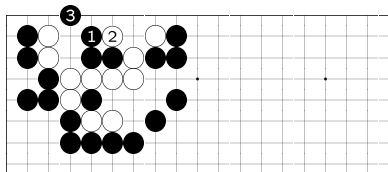
problem 600

problem 601
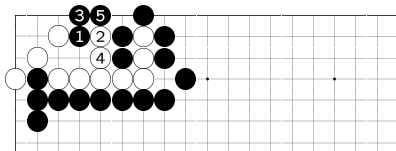
problem 607

problem 602

problem 608

problem 603

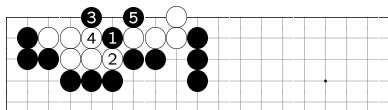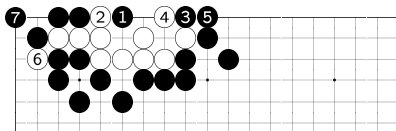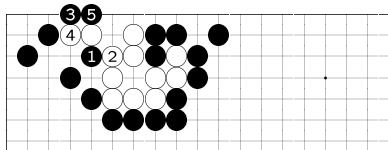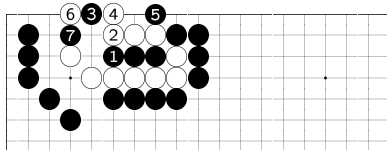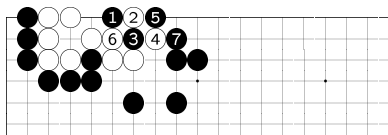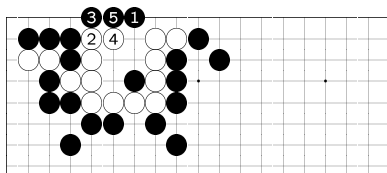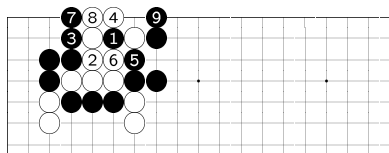*problem 609*

problem 604

problem 610

problem 605

problem 611

problem 606
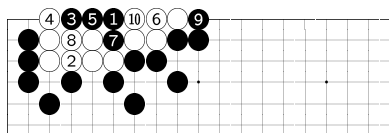
problem 612

problem 613

11 *at* **5**
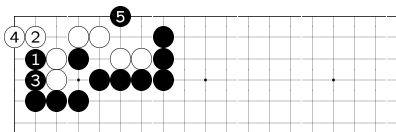
problem 614
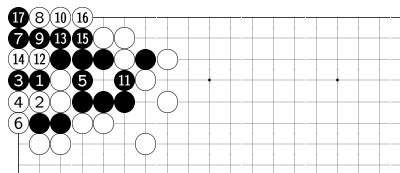
problem 615
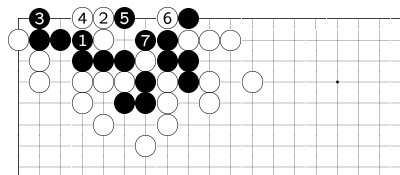
problem 616
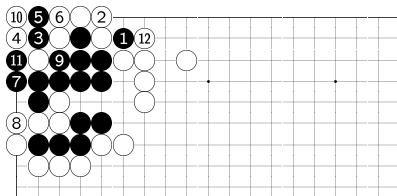
problem 617

13 *at* **3**
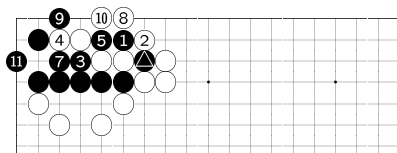
problem 618

⑥ *at* ▲
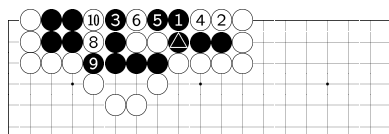
problem 619

7 *at* ▲

Diagram 2: 11
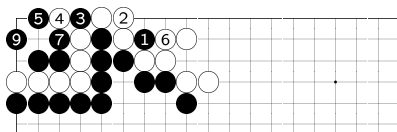
problem 620

⑧ *at* **3**
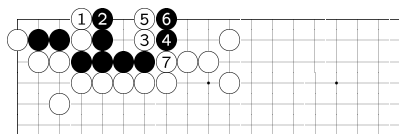
problem 621

problem 622

⑥ *at* △
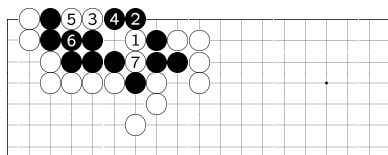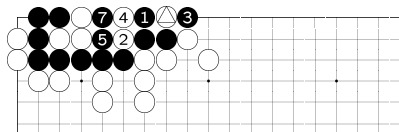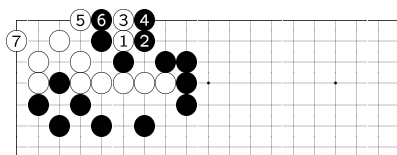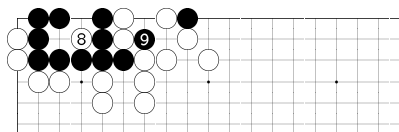
Diagram 2: 8-9

problem 623
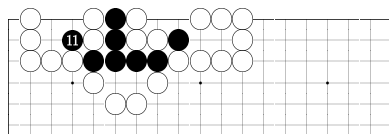

problem 624

❾ *at* ❼

problem 625
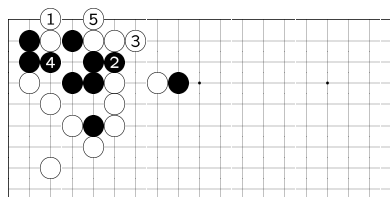
problem 626
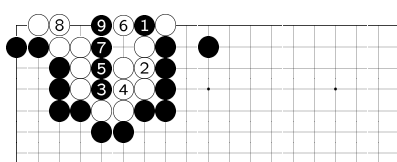
problem 627

problem 628
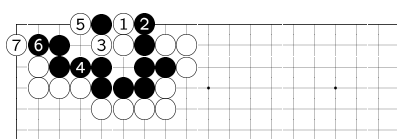

problem 629

problem 630

problem 631

problem 632

problem 633

problem 634

problem 635
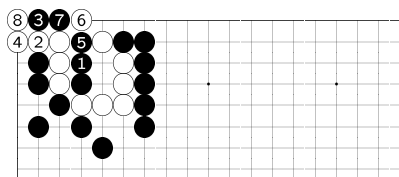
problem 636

problem 637
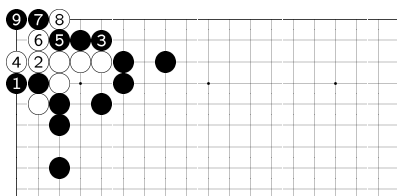
problem 638
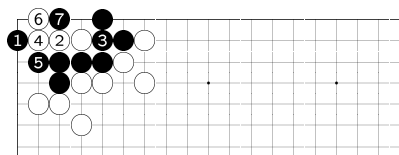
problem 639
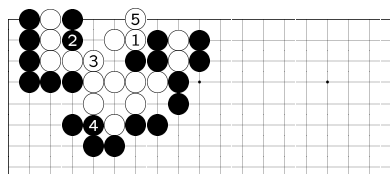
problem 640

problem 641
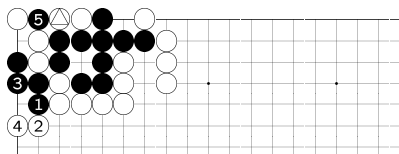
problem 642

⑥ *at* △
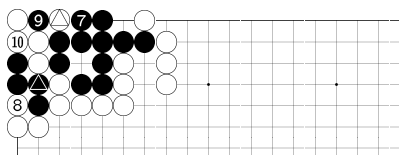
Diagram 2: 7-12
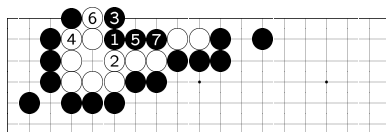
⓫ *at* ▲, ⑫ *at* △
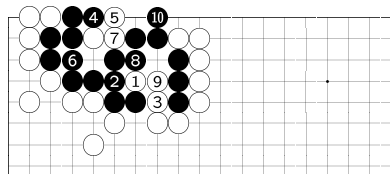
problem 643

problem 644

❼ *at* ❺
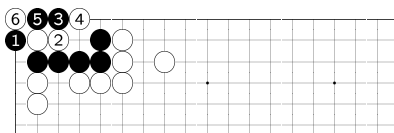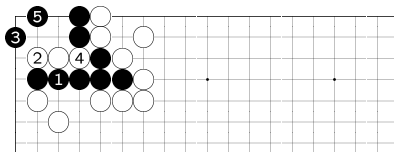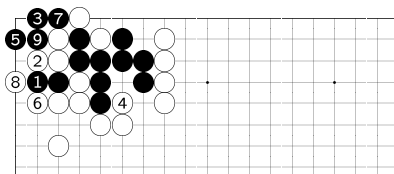
problem 645

problem 646
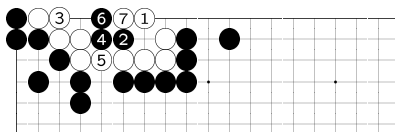

problem 647

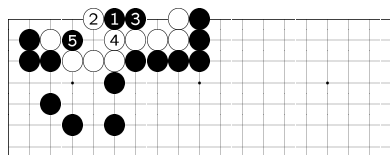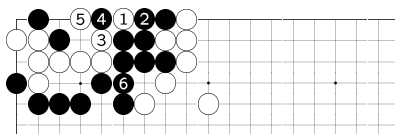*problem 648*

❼ *at* ❶, ⑧ *at* ❸
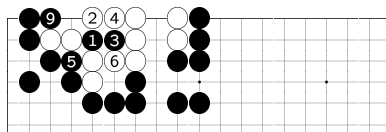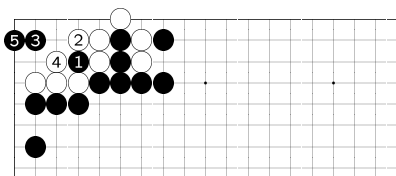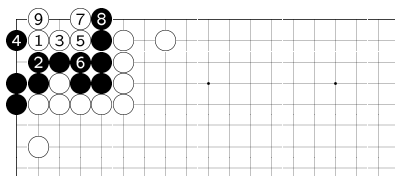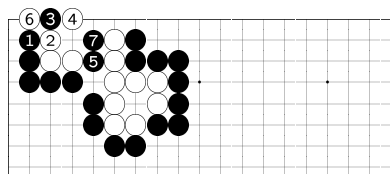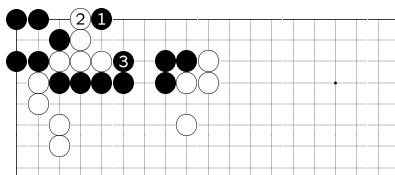
problem 649

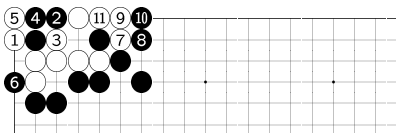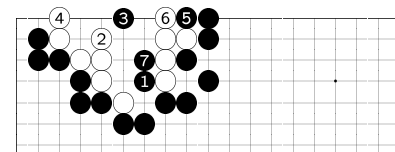*problem 654*
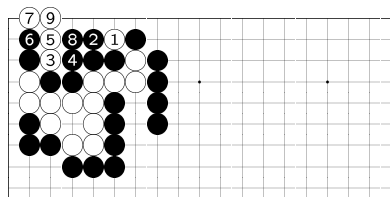
problem 650

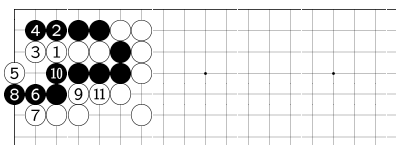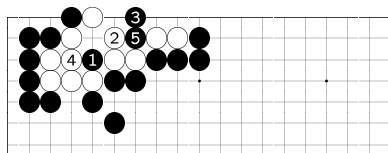*problem 655*

problem 651

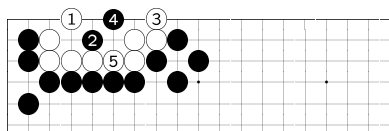*problem 656*

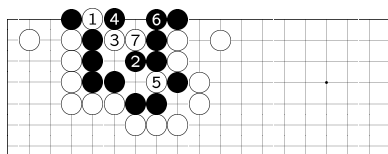⑦ *at* ①

problem 652

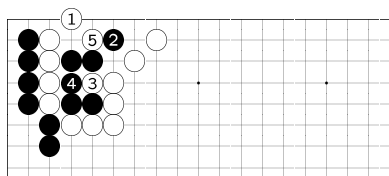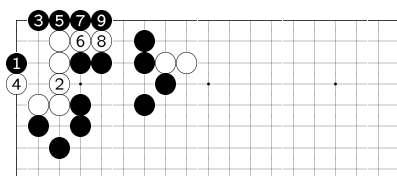*problem 657*

problem 653

problem 658

problem 659

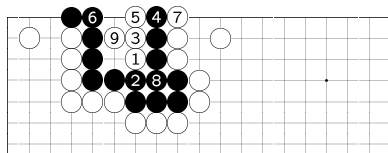*problem 664*

problem 660

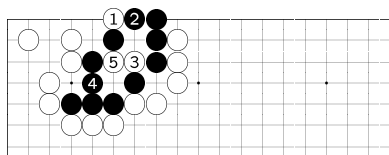*problem 665*

problem 661

problem 666
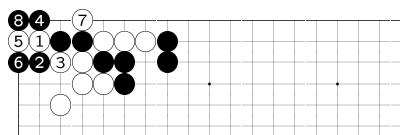
problem 662
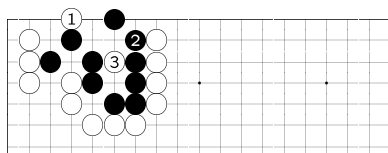
⑨ *at* ①
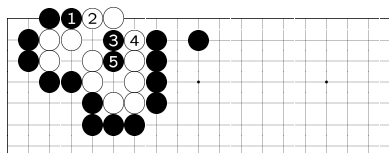
problem 667

problem 663

problem 668

problem 669

problem 670
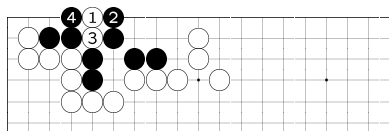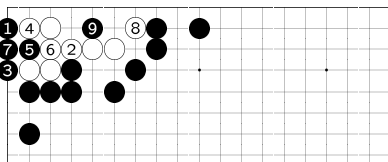
⑤ *at* ③
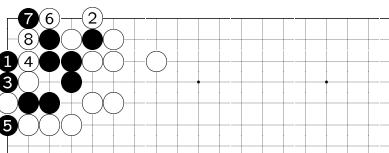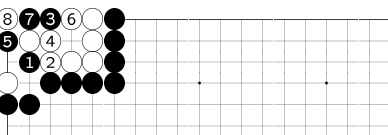
problem 671
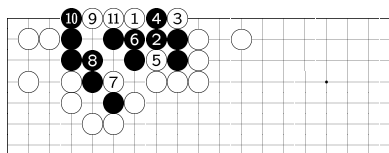
problem 672

problem 673

problem 674

problem 675

problem 676

❾ *at* ❼
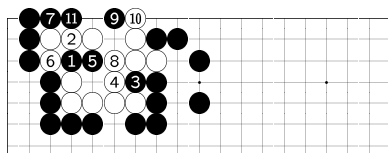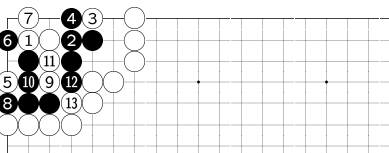
problem 677
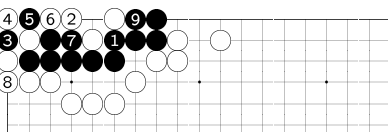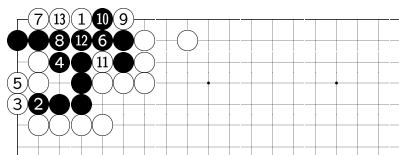
problem 678

problem 679
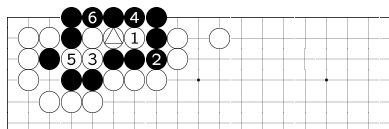
problem 680

⑦ *at* ⬡

Diagram 2: 8-9

problem 681

⑨ *at* ⑦

problem 682

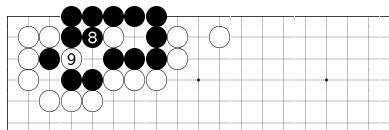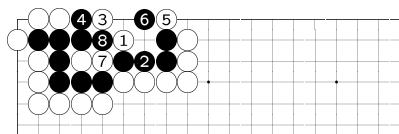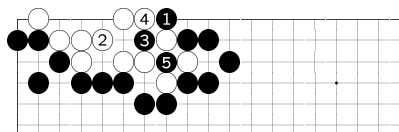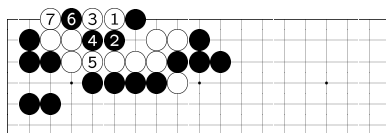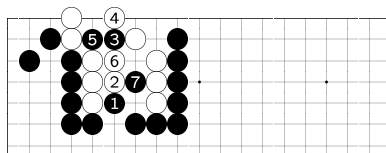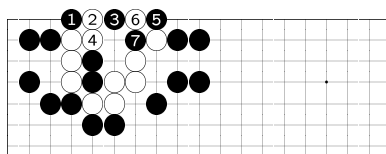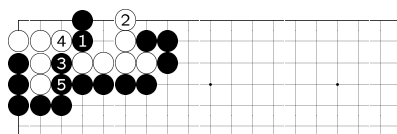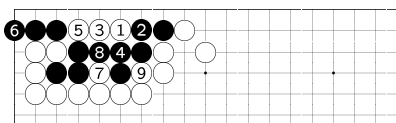*problem 683*
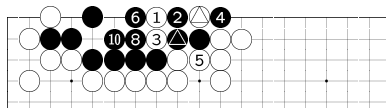
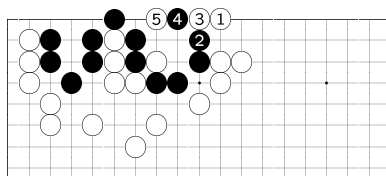*problem 684*

⑦ *at* ⬡, ⑨ *at* ⬤
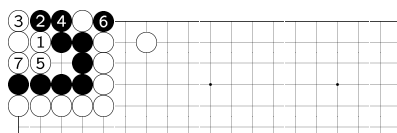
problem 685

problem 686

problem 687

problem 688

problem 689
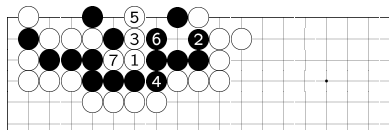
problem 690

problem 691

❶ *at* △

problem 692

problem 693

❾ *at* ❺, ⑩ *at* ❶, ⑫ *at* ❸
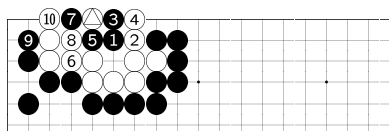
problem 694

problem 695

problem 696
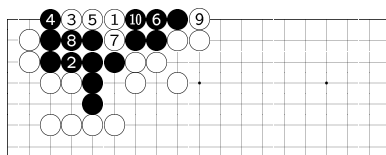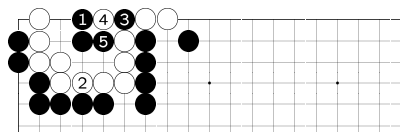
⑪ *at* ⑤
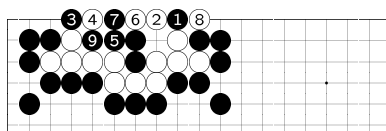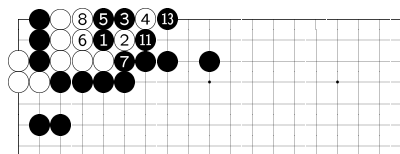
problem 697
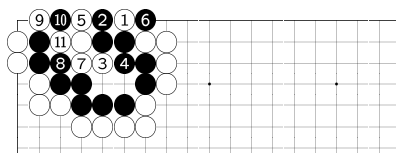
problem 698
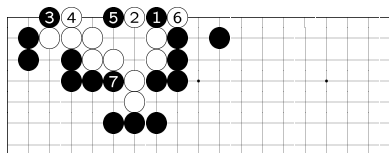
problem 699

problem 700

⑨ *at* ❻
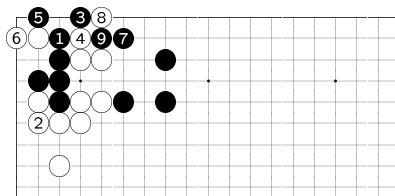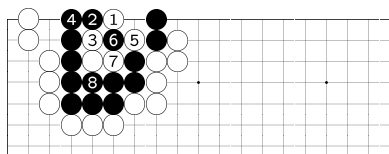
problem 701

problem 702

⑪ *at* ⑨

problem 703

❶❷ *at* ❹, ⑬ *at* ①, ❶❹ *at* ❿
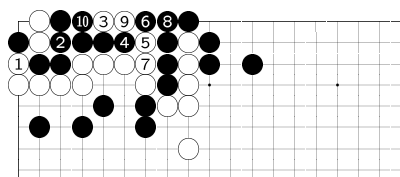
problem 704

problem 705

problem 706

problem 707
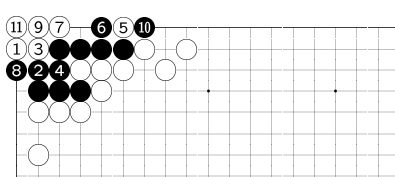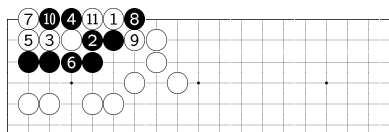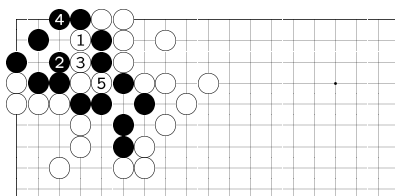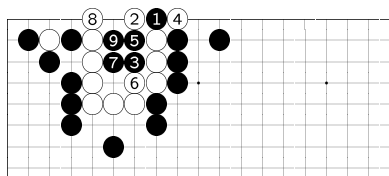
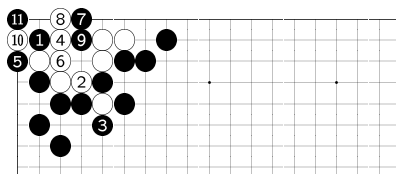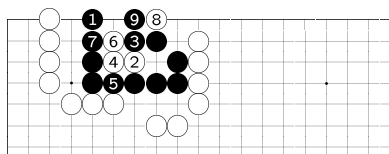*problem 708*
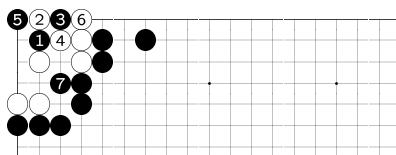
problem 709

problem 714
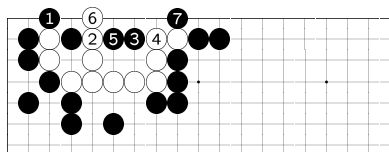
problem 710

problem 715

problem 711
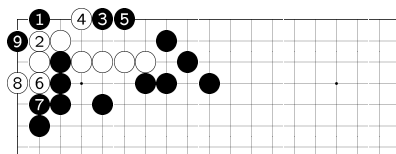
problem 716
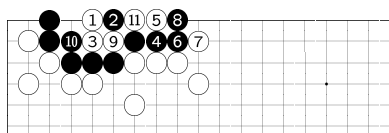
problem 712

⓬ *at* ❷, ⑬ *at* ⑪
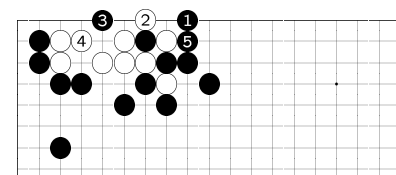
problem 717

problem 713

⓫, ⑭ *at* ❼, ⑫ *at* ▲

problem 718

❾ *at* ▲, ⑩ *at* ❼, ⓫ *at* ❺, ⑫ *at* ❸
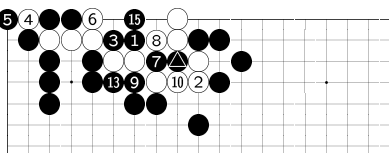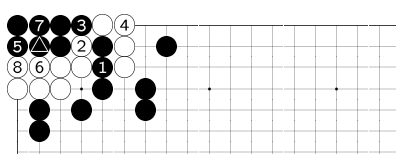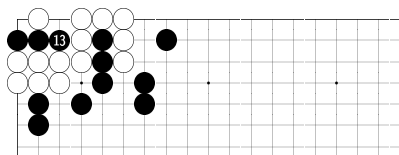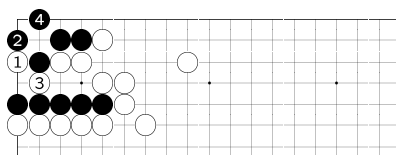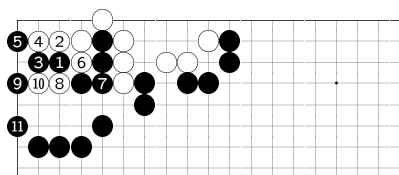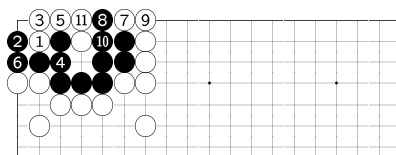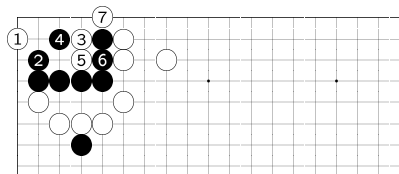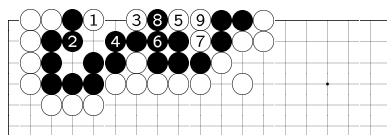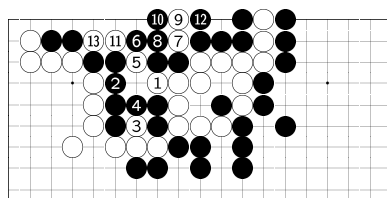
Diagram 2: 13

problem 723

problem 719

problem 724

problem 720

problem 725

problem 721

⑩ *at* ❼

problem 726

problem 722

❽ *at* ❹
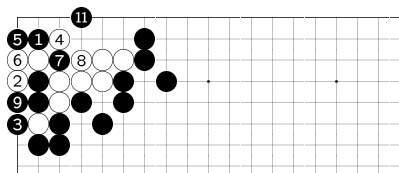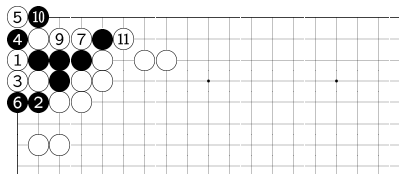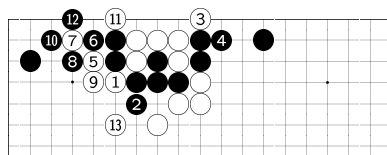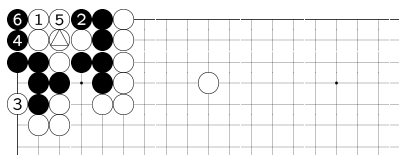
problem 727

problem 728

⑦ *at* △
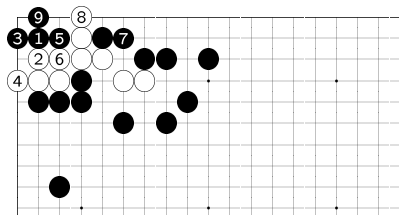
problem 729

problem 730

problem 731

❿ *at* ①

problem 732

⑪ *at* ⑦
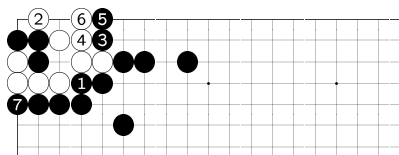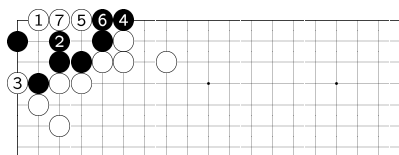

problem 733

⑭, ⑯ *at* ⑩, ⓯ *at* △, ⓱ *at* ▲
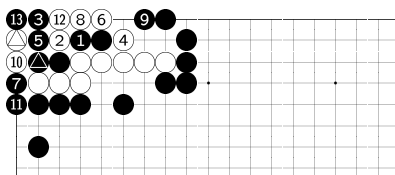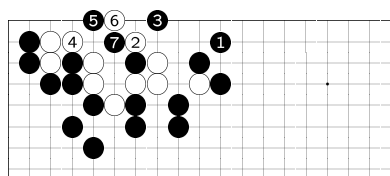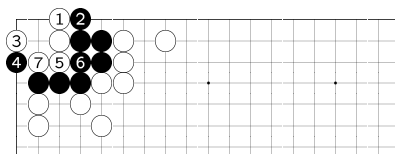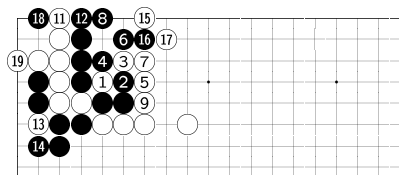
problem 734
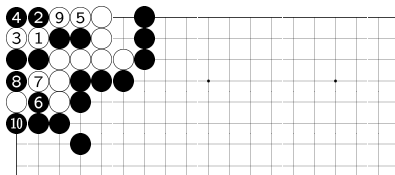
problem 735

⑪ *at* ①

problem 736

problem 737