# Study Guide for Test 2, Math 125

(The test will be on Monday, April 14, and covers material from Chapters 13, 14, 15, 17, and 18.) Math 125 Kovitz Spring 2025

#### • What Are the Chances?

Chapter 13.1, pages 221 to 225; boxes on page 222, 223 (both), and 225; figure 3 on page 225; page 226, problems 2 and 3.

# • Conditional Probabilities.

Chapter 13.2, pages 226 and 227: example 2; technical note on page 227; page 227, problems 1 to 4.

#### • The Multiplication Rule.

Chapter 13.3, pages 228 and 229: examples 3 to 6; box on page 229; pages 229 and 230, problems 1, 2, 3, 5, and 7; page 235, problem 4; page 253, problem 11(a); page 569, problem 15(a).

The important problems here are page 230:7; page 253:11(a); and page 569:15(a).

# • Independence.

Chapter 13.4, pages 230 to 232: examples 7 to 10; boxes on pages 230, 231, and 232; page 232, problem 3; page 235, problems 6, 8, and 9; summary on page 236, points 2 through 9.

# • More About Chance: The Addition Rule.

Chapters 14.2 and 14.3, pages 241 to 246: examples 3 through 6; both boxes on page 241 and the box on page 242; technical notes on pages 245 and 246; page 243, problems 3 through 6; page 247, problem 4; pages 252 and 253, problems 3, 5, 6, and 7; page 262, problems 9(a) and 9(c); summary on page 254, point 2.

# • The Paradox of the Chevalier de Méré.

Chapter 14.4, box on page 250; page 250, problems 1(a), 1(d), 3, and 4 (a); page 253, problem 7; page 431, problem 13; page 569, problem 15; summary on page 254, point 3.

A key problem is page 250: problems 1(a) to 1 (d).

#### For a neat summary of probability rules and some brand-new formulas, look at the sheets titled Chaps 13 to 15: Formula and Probability, on the web site.

# • The Binomial Formula.

Chapter 15.2, pages 259 to 261: example 1; box on page 259; page 258: probs. 3a–3d and 4 (b); page 261, problems 1 and 2; page 268, problem 20; summary on page 268, point 2.

# • The Expected Value and Standard Error (for the sum).

Chapters 17.1 through 17.2, pages 288 to 293: example 1; box on page 289, both boxes on page 291, and top box on page 292; page 290, problems 1 (a) and 1(d); pages 293 and 294, problems 1, 2, 4, and 6; page 304, problem 3; page 306, problem 12; summary on page 307, points 1, 2, and 3.

# • Using the Normal Curve on the Sum of the Draws.

Chapter 17.3, pages 294 to 296; pages 296 and 297, problems 1 and 2; pages 304–305, problems 1 and 6; summary on page 307, point 6.

# • A Short-cut.

Chapter 17.4, pages 298 and 299; box on page 298; page 299, problem 1; page 304, problem 3.

# • Classifying and Counting.

Chapter 17.5, pages 299 to 303; examples 4 and 5; box on page 301; pages 303 and 304, problems 1, 2, and 6(a) (Not the Review Problems); page 328, problem 6.

# • The Normal Approximation for Probability Histograms.

Chapters 18.3 to 18.4 and 18.6, pages 315 to 318 and 325 to 327: example 1; boxes on pages 325 and 326; pages 312 and 314, problems 1 and 2 (*Pay particular attention to the answers to problem 2.*); page 319, problems 2, 3, and 6; pages 327 and 328, problems 1, 2, 4, and 8; summary on page 330, points 3, 4, and 5.

Homework 7: 3, 4, 5ab

Homework 8: 2acfh, 3, 7, 9a

Homework 9: 1bde, 2, 4, 5

Homework 10: 2a, 3b, 4

Homework 11: 1, 3

WeBWorK HW 5: 1, 2, 3a, 4a, 6, 7gh

WeBWorK HW 6: 7 and 9

WeBWorK HW 7: 2, 3, 4a

WeBWorK HW 8: 2, 3a, 5

WeBWork HW 9: 9

Quizzes 2 and 3: all.

Practice for Quiz 2: 1, 2, 3, 4a, 4b.

Practice for Quiz 3: all.

Practice for Test 3: all.