Study Guide for Final Exam, Math 125

(The final exam will be on Friday, December 16, and covers material from Chapters 3–5, 8, 10, 12–15, 18, 21, 23, 26, and 28.)

Math 125 *Kovitz* Fall 2022

- **The Histogram.**

  Chapters 3.1, 3.2, and 3.3: pages 31 to 40; example 1, page 40; pages 41 and 42, problems 1 and 4; page 53, problem 5.

- **The Average and the Standard Deviation.**

  Chapters 4.2 and 4.6, pages 58 to 60 and pages 71 to 72: example 2 on page 72; boxes on pages 59 and 71; pages 72–73, problems 1 and 5 (a); page 74, problem 1; page 93, problem 1 (b); summary on page 75: point 2.

- **The Normal Approximation for Data.**

  Chapters 5.1 to 5.3, pages 78 to 87: example 1 on page 80, example 5 on pages 83–84, example 9 on page 87; box on page 79; page 82, problems 1 (a) and 2 (a); page 84, problem 1 (a); page 88, problem 1(c); page 94, problems 3 and 4; summary on page 96: points 2 and 4.

- **Computing the Correlation Coefficient.**

  Chapter 8.4, pages 132 and 133: example 1; page 174, problem 1; page 177, problem 9.

- **The Regression Method.**

  Chapters 10.1 and 10.3, pages 158 to 161, and pages 165 to 166: example 1 on pages 165 to 166; both boxes on page 160; page 161, problems 1, 2 (a), 2 (b), and 4; page 167, problem 1 (a); page 176, problems 2 (b), 3(a), and 4; page 568, problem 10; summary on page 178: point 1.

- **The Regression Fallacy.**

  Chapters 10.4 and 10.5, pages 169 to 175: example 3 on page 175; box on page 169; page 175, problems 1 to 3; pages 176 and 177, problem 4; page 178, problems 9 (b) and 10; page 199, problem 7; summary on page 179: points 4 to 6.

- **What Are the Chances?**

  Chapter 13.1, pages 221 to 223 (top); chapter 13.3, pages 228 and 229; example 6, page 229; page 230, problem 7; page 232, top box; page 235, problems 8 and 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; pages 246 and 247, problems 1 to 5; pages 252 and 253, problems 3, 5, 6, and 8;
  page 262, problems 9 (a), (b), (c), and (e); summary on page 254, point 2.

- **The Binomial Formula.**

  Chapter 15.2, pages 259 to 261: example 1; box on page 259; 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 and 17.2: pages 288 to 292; page 290, problems 1(a) and 1 (d); page 293, problems 1(a), 1 (b), and 4.

- **The Expected Value and Standard Error (for the sample percentage).**

  Chapter 20.2, pages 359 and 360; page 361, problem 2; page 372, problems 7 (c) to 7(f) .

- **The Accuracy of Percentages: Introduction.**

  Chapter 21.1, pages 375 to 379: expecially the top box on page 378 and example 1; page 379, problems 2 to 5; page 386, problem 4 (a).

- **Confidence Intervals.**

  Chapter 21.2, pages 381 and 382: example 2; middle bullet on page 381; page 387, problems 5 (a) to (d), 6 (a) and (b); page 392, problem 5; page 435, problem 27; summary on page 394, points 1, 3, and 4.

- **The Accuracy of Averages: Introduction.**

  Chapter 23.1, pages 409 to 412: example 1 and example 2 (a), also technical note (ii) on page 415; boxes on pages 410 and 412;; page 423, problems 1 to 3; pages 425–427, problems 2 (a) , 3 (a), 9, and 10.

- **The Sample Average (Confidence Intervals for Averages).**

  Chapter 23.2, pages 415 to 418 top: example 3; page 421, problem 6; pages 415 and 417, all bullets; box on page 416; page 421, problem 6; pages 425–427, problems 2, 3, 8 (a), 8 (c), 8 (d),8 (e), and 10.

- **Which SE?**

  Chapter 23.3, pages 422 and 423; page 423, problems 1, 2, and 4 (a); summary on page 437, points 2, 4, 5, and 6.

- **The Null and the Alternative**

  Chapter 26.2, pages 477 and 478; page 478, problems 1 and 2; page 495, problem 1.

- **Test Statistics and Significance Levels.**

  Chapter 26.3, pages 478 to 481; page 481, problems 1 (a) and 3; page 483, problems 2 and 3.

- **Zero-one Boxes.**

  Chapter 26.5, pages 483 to 485 top; page 487, problems 7 and 8; page 518, problem 1.

Sample Final Exam for Dec. 2022: all.

Review Problems for Final:
problems 1, 4cde,5a, 6c, 8a, 9a, 14, 19abd, 20, 22, 23, 27ab, 29, 30, and 5.

From Test 1: problems 2 and 3.

From Test 2: problems 1 and 3.

From Test 3: problems 1, 2, and 3.

From Test 4: problems 1, 2, 3, and 5.

Quiz 1: all.

Quiz 3: problem (a).

From Practice for Test 1: problems 2 and 4.

From Practice for Test 2: problems 1, 2, 4, and 5.

From Practice for Test 3: problems 1, 2, and 3.

From Practice for Test 4: problems 1 (a), 2 (a), 3 through 7, and 9.

From Practice for Quiz 1: all.

From Practice for Quiz 3: all.