Day	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Number of Births	77	110	124	122	120	123	97

13. Kentucky Derby The table below lists the frequency of wins for different post positions in the Kentucky Derby horse race (current as of this writing). A post position of 1 is closest to the inside rail, so that horse has the shortest distance to run. (Because the number of horses varies from year to year, only the first 10 post positions are included.) Use a 0.05 significance level to test the claim that the likelihood of winning is the same for the different post positions. Based on the result, should bettors consider the post position of a horse racing in the Kentucky Derby?

Post Position	1	2	3	4	5	6	7	8	9	10
Wins	19	14	11	15	14	7	8	12	5	11

14. Win 4 Lottery The author recorded all digits selected in New York's Win 4 Lottery for two drawings held each day in a recent year. The frequencies of the digits from 0 through 9 are 280, 303, 331, 289, 285, 294, 283, 274, 297, and 284. Use a 0.05 significance level to test the claim of lottery officials that the digits are selected in a way that they are equally likely.

15. Police Calls The police department in Madison, Connecticut released the following numbers of calls for the different days of the week during a recent February that had 28 days: Monday (114); Tuesday (152); Wednesday (160); Thursday (164); Friday (179); Saturday (196); Sunday (130). Use a 0.01 significance level to test the claim that the different days of the week have the same frequencies of police calls. Is there anything notable about the observed frequencies?

16. Police Calls Repeat the preceding exercise using these observed frequencies for police calls received during the month of March: Monday (208); Tuesday (224); Wednesday (246); Thursday (173); Friday (210); Saturday (236); Sunday (154). What is a fundamental error with this analysis?

17. World Series Games The table below lists the numbers of games played in the baseball World Series as of this writing. That table also includes the expected proportions for the numbers of games in a World Series, assuming that in each series, both teams have about the same chance of winning. Use a 0.05 significance level to test the claim that the actual numbers of games fit the distribution indicated by the expected proportions.

Games Played	4	5	6	7
Actual World Series Contests	20	23	23	37
Expected Proportion	2/16	4/16	5/16	5/16

18. American Idol The contestants on the TV show *American Idol* try to win a singing contest. At one point, the web site WhatNotToSing.com listed the actual numbers of eliminations for different orders of singing, and the expected number of eliminations was also listed. The results are in the table below. Use a 0.05 significance level to test the claim that the actual eliminations agree with the expected numbers. Does there appear to be support for the claim that the leadoff singers appear to be at a disadvantage?

Singing Order	1	2	3	4	5	6	7 through 12
Eliminations	20	12	9	8	6	5	9
Expected Eliminations	12.9	12.9	9.9	7.9	6.4	5.5	13.5

19. M&M Candies Mars, Inc. claims that its M&M plain candies are distributed with the following color percentages: 16% green, 20% orange, 14% yellow, 24% blue, 13% red, and 13% brown. Refer to Data Set 20 in Appendix B and use the sample data to test the claim that the color distribution is as claimed by Mars, Inc. Use a 0.05 significance level.