

 **12. Births** Records of randomly selected births were obtained and categorized according to the day of the week that they occurred (based on data from the National Center for Health Statistics). Because babies are unfamiliar with our schedule of weekdays, a reasonable claim is that births occur on the different days with equal frequency. See the table that follows. Use a 0.01 significance level to test that claim. Can you provide an explanation for the result?

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

 **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	$2/16$	$4/16$	$5/16$	$5/16$



14. Is Seat Belt Use Independent of Cigarette Smoking? A study of seat belt users and nonusers yielded the randomly selected sample data summarized in the given table (based on data from “What Kinds of People Do Not Use Seat Belts?” by Helsing and Connstock, *American Journal of Public Health*, Vol. 67, No. 11). Test the claim that the amount of smoking is independent of seat belt use. A plausible theory is that people who smoke more are less concerned about their health and safety and are therefore less inclined to wear seat belts. Is this theory supported by the sample data?

	Number of Cigarettes Smoked per Day			
	0	1–14	15–34	35 and over
Wear Seat Belts	175	20	42	6
Don't Wear Seat Belts	149	17	41	9

17. Survey Refusals A study of people who refused to answer survey questions provided the randomly selected sample data shown in the table below (based on data from "I Hear You Knocking But You Can't Come In," by Fitzgerald and Fuller, *Sociological Methods and Research*, Vol. 11, No. 1). At the 0.01 significance level, test the claim that the cooperation of the subject (response or refusal) is independent of the age category. Does any particular age group appear to be particularly uncooperative?

	Age					
	18-21	22-29	30-39	40-49	50-59	60 and over
Responded	73	255	245	136	138	202
Refused	11	20	33	16	27	49