

## AP Statistics Projects Ideas

Some of these ideas are dated but might provide you with an idea of your own.

1. After watching an infomercial on a new and improved fishing rod, I bought it to determine if I would catch more fish than my old fishing rod.
2. In an effort to stop student stereotyping, one group found that orchestra students did indeed take the most AP level course and football players were enrolled in the lowest mean number of AP classes. On the other hand, football players had the smallest number of off-blocks on average of the many groups studied. The group also found that many athletes are in the top ten percent. Conclusion: "Don't judge a book by its cover."
3. Females receive less attention and slower service than male shoppers regardless of the gender of the salesperson. The students suggested that men shop to buy where women often browse.
4. Eighty-one percent of the men accompanying female shoppers into the store Victoria's Secret felt comfortable enough to stay. The others? They leaned on the railing outside the store waiting for their partner to finish shopping.
5. When a twenty dollar bill is left unattended in front of a grocery store, females are much more likely to pick it up than males. Three areas were tested. Those living in East Austin were much more likely to pick up the cash (just a Xerox color copy) than those in Northwest Austin.
6. A phone survey of parents and students found that today's teenagers experienced their first kiss about five years younger than their parents. Students concluded that "today's youth is a little more liberal and a little wilder" than their parents.
7. When a GAP bag is left unattended on a bench at the mall, males over the age of 25 are the most likely to take the bag and leave. Women look first.
8. The water fountains tested at a high school had pH levels between 9.16 and 9.80. Human pH levels range from 7.35 to 7.43 and can tolerate pH levels between 4 and 10. There appears to be no harmful levels of lead in the drinking water. Phew!
9. When pulled over for a traffic violation, females are able to "get out of the ticket" more often than males. This study showed that females received ten percent less tickets than males once they had already been stopped by an officer.
10. Three-fourths of University of Texas students surveyed stated that their high school did give them sufficient preparation for college.
11. Regardless of the degree of trouble, eighty-two percent of Westwood students claimed that they were only "yelled at." The expected much stricter punishments for various behaviors, but found that most parents rarely stuck to a discipline plan. The second most common form of punishment was grounding and the third was a temporary ban from the student's car. (I don't think the group even realized how significant it is that the student owned a car.)
12. Only thirty-eight percent of motorists in the area come to a complete stop at stop signs. This includes the stop sign in front of the neighborhood police station on Milwright Parkway. Even an officer stood with the students for a while and the spectacle had no effect on driver compliance. This group also had a video of many cars just rolling through residential stop signs without even slowing down. This group concluded that most drivers are too impatient to come to a complete stop and feel that the stop sign does not apply to them.
13. The top four qualities teenage respondents want in a person of the opposite gender are fun, friendly, have a good sense of humor, and have a good body.
14. Males are much more likely to cut their hair for sports tickets, money, or a free trip than females. Most females would not cut their hair for any prize.
15. When third graders at Spicewood and Pond Springs Elementary schools were asked who they admired most, nearly half said they admired a friend most. A parent was the second highest choice, with famous athletes coming in third, and famous musicians/singers coming in fourth.
16. Sophomores at Westwood seem to fall asleep in class most often. An outrageous 84% admitted to falling asleep in class at least once first semester. Freshman and senior sleep the least. The top reasons for falling asleep were lack of sleep the previous night and bored of the class. All subject areas suffered sleepy students about equally with once a month being the most chosen frequency for class time napping.

17. Males and females score equally badly on gender biased questions. Female biased questions included “What do you put on pantyhose when they run? A) pantyhose tape B) nail polish C) rubber cement or D) hair spray “Male biased questions included “What is the highest amount of shells allowed in a hunting shotgun?” and “How many points is a safety worth in football?” Each gender scored significantly higher on the test biased towards them.
18. When elementary students were shown photographs of famous personalities the most recognized faces were Dave Thomas of Wendy’s fame, South Park characters, Adam Sandler, and Ricky Williams. George Bush was known by less than 20% and Al Gore by less than 5% (But hey, Cindy Crawford scored just as low).
19. It turns out that high school males are searching for a blue eyed, shoulder length brown haired girl of the same race and age with medium height, medium makeup and trendy clothes. I haven’t seen her.
20. The mean SAT and ACT scores are related to the economic status of the student body in the school. The higher the economic standing, the higher the standardized test scores.
21. The average value of a Westwood teacher’s car is worth approximately four thousand dollars more than the average student car. We’ve come a long way, Baby. In previous studies the student’s had us beat!
22. When a stranger (Will Mathews) invades your personal space by setting too close to you on a public bench, how will you react? “Generally older subjects tended to be more passive when put in this situation, and either ignored or were subtle in their reaction. Younger subjects showed that they were uncomfortable by taking more obvious actions such as walking away or initiating conversation.”
23. At Lake Creek Parkway and 183, an average of 10 cars runs a red light in each 15 minute interval regardless of the time of day. Be careful out there!
24. A study of racism at Westwood found that 97% of students felt completely comfortable in a room with those of a different race. Students did feel, though, that a moderate amount of racism is present at Westwood in the form of racial jokes and comments. Only 12% found the Warrior mascot derogatory towards the American Indians.
25. When asked to match up celebrity couples, females were more accurate than males.
26. Judging school spirit by student involvement in extra-curricular activities, knowledge of school traditions (like the words to the school song), and overall student response on spirit, Westlake High School showed more spirit than the second place school, McNeil High, or Westwood. McNeil had nearly twice as many students with after school jobs as the other two schools. Westwood had the lowest percentage of working students.
27. Does the money spent on a movie predict its box office success (worked in a movie theatre)?
28. Information on local paper recycling was not obtainable in the ten-week project period. The group studying the issue suspects that much of the recycled paper collected finds its way to the landfill.
29. When given the choice, both high school and elementary school children choose the blue M & M’s over the other colors first. Subjects were simply offered two candies from a group of candies and the color(s) chosen were recorded.
30. Although students are aware of sexual harassment cases, nearly all students feel that it is not a problem at Westwood. “Simply put, it is less a case of apathy than students believing that there are issues more deserving of attention and concern than sexual harassment on this campus.”
31. The amount of time a student spends getting ready for school has no impact on his/her grades.
32. In “Where Did All the Guys Go?”, students found that more male babies are born in the United States. But between the ages of 35 and 45 the male population begins reducing at a much faster rate than the female population. There are fewer males in every age category after 40. The group also found that the females outnumbered the males five to one at the Renaissance Retirement Community here in Austin. The age distribution was similar for both sexes. Residents were from 70 to 100 years old with the majority in their mid eighties. While interviewing the residents, students were given several words of advice. My favorite quote is “Prepare for fun, hang in there, and READ, READ, READ.”
33. The teacher job satisfaction survey was completed by Westwood, Canyon Vista, and Anderson Mill Elementary teachers. Most teachers were satisfied with their job but not their pay. (Big surprise!) Anderson Mill had the most satisfied teachers and Westwood the least satisfied. 74% of Westwood’s teacher’s rated overall job satisfaction as a 4 or 5 on a five point scale

(5 being most satisfied). Teachers at all three schools know what is expected of them and have had opportunities to learn and grow. Only about half of Westwood teachers feel they have the supplies necessary to teach their course and half will continue to teach until retirement. According to Gallup, the number one indicator of job satisfaction is having a good friend at work. Only 45% of the Warrior faculty has a good friend at work. Maybe that's why 11% of you are looking for a different job.

34. Westwood's coffee shop, Brewed Awakenings, was a success for marketing students. About 20% of the student body tried at least one product, rated the taste high, and enjoyed the selection. The only complaint was the slow service at peak times.
35. When students were asked questions that were gender biased, having a sibling of the opposite sex did not seem to improve their scores. A typically female question might be about make-up while a typically male question might be about sports figures or tools.
36. The rotating schedule at Canyon Vista does not seem to have a big effect on overall grades compared to the grades at the traditionally scheduled Grisham Middle School. Grades are affected by so many variables that a scheduling comparison is difficult.
37. Women and older people (that's over 50 in this survey) frequent Lakeline Mall the most. Customers are generally satisfied with the food and service at the food court. The eatery with the highest rating was Auntie Anne's. The lowest rating went to Jalepenos. The only complaint was about the number of tables that rocked due to an uneven leg.
38. Almost 75% of women have dieted in the past. Of those, less than half were successful. A loss of ten to twenty pounds was the most common goal. Only about 10% used artificial supplements or professional help. Most dieters choose to attempt the loss on their own.
39. Height does not appear to have an effect on the accuracy of free throw shots by basketball players. If anything, shorter players tend to be slightly more accurate.
40. About 20% of the class of 2003 (next year's freshman) is frightened about coming to Westwood next year. What scares them most: harder classes, more homework, getting lost, and mean teachers. A big majority of those surveyed plan to participate in some sort of extra-curricular activity and most are excited about meeting new people their age.
41. Pronounce this word: **interesting**. If you're like most Warriors you said "in-ter-est-ing". But 36% said "intristing" and 14% said "ineresting". By testing the pronunciations of words such as **pecan** and **Nevada**, students found that Westwood has a very diverse population. Think I'll head for the "pop" machines and take a break.
42. After interviewing several classes at Spicewood Elementary, students found that more than half of each grade level watches television shows requiring no parental guidance. There seems to be no increase in violent programming preference from one grade to the next. Statistics students rated over 60 shows chosen by the children. Shows students watched that earned a rating of 5 for most violent included *Beavis and Butthead* and *Celebrity Death Match*.
43. Last year the Austin Humane Society put 1% of the animals it received to sleep while the Williamson County Humane Society put 50% of its incoming animals to sleep. Why? The Austin location does not take in stray animals.
44. The top three things that students do that annoys Westwood teachers is talking non-stop to another student, cheating during a test, and not taking responsibility for their actions. At McNeil, the teachers agreed with our top two but their third highest annoyance was eating or drinking during class. Students were surprised by the variation in individual teacher responses. (Big surprise! We're not all the same.)
45. Channel 24 (KVUE) seems to predict the weather a bit more accurately than their local competitors but the differences between the channels is not statistically significant.
46. Private and public school students were surveyed about the qualities they desired in a mate. Religion and strong morals were much more important to private school students. A sense of humor was only chosen by public school students. An attractive body, sexy, and fun were the top choices of public school students.
47. In a random phone survey, it was found that males know more about government than females. Voters also showed significantly more knowledge than non-voters. Age did not seem to affect the score of respondents.
48. In a random phone survey, students learned that many people do not go downtown due to traffic congestion and parking problems. People said that they would be more likely to go downtown if there were more restaurants, clubs, and unique retail stores.

49. Chivalry may be coming back. When asked the question “Would you let a woman take your place on the last escape boat from the Titanic?” Only 23% of college males answered yes while 67% of high school males said yes. High school males were also more apt to open doors and pay for dates.
50. A group of guys were not surprised to learn that Westwood girls were 20% more likely to be driving cars their parents had purchased for them – and most were brand new.
51. After interviewing elementary children at Spicewood and Harris Elementary (East Austin), students found that income does have an effect on what children want to be when they grow up. The Spicewood kids dreamed of being scientists, doctors, lawyers, and yes even a few teachers. At Harris, students dreamed of being grocery clerks, policemen and teachers (much more popular with inner city students). The outliers? One girl at Harris wanted to be a hooker like Mom while one Spicewood student wanted to be a rubber ducky.
52. In an effort to find a solution to hall congestion at Westwood, students found the reasons for congestion too varied to come up with a single solution. Sometimes students just stop in the middle of the hall to talk or pass notes (give back homework?). Sometimes students walk on the wrong side of the hallway which causes bottle necks. Traffic patterns still seem to be a big issue for some.
53. Over 80% of Kindergarten and First grade students believe in Santa, 73% believe in the Tooth Fairy, and 58% believe in the Easter Bunny. One first grader is saving up all of his teeth for a “big score.”
54. On the average, 10 people run the red light at Hymeadow and 183 during any 10 minute period. Other local intersections were just as bad. The evening rush hour appears to be the worst. Be careful!
55. When shown pictures of famous people/characters, not one elementary student recognized Cindy Crawford and only a few recognized Monica Lewinsky. President Clinton and Homer Simpson were the most recognized. Unfortunately, Joe Camel is still familiar to many in spite of his absence the past few years.
56. The results from the political survey of Westwood teachers identified the staff as 40% Republican, 33% Democrat, and the remaining not claiming loyalty to any party. Most responses fell in the respective party platforms. The surprises to the students were “nearly a quarter of the Democrats supported legalization of marijuana.” Students didn’t expect this “due to common stereotypes of teachers.” No surprise that all of them were Democrats or not a supporter of any party. A majority of all parties opposes a national identification card as an invasion of privacy. “It’s interesting to note that, although no Republicans wanted the military to be downsized; only three-fifths want to use American troops for U.N. operations. And even though a fourth of Democrats and a fifth of independents want the military to be downsized, a great majority of both groups support the use of whatever military we have for international peacekeeping.” This group also noted: “Teachers can’t follow directions any better than students.” The group’s final conclusion: “Students can’t stereotype or accurately judge the philosophy of their teachers based solely on their profession.”
57. It appears that athletes are most likely to be injured in guys track and least likely to be injured in softball. The most serious injuries occur in football.
58. Parents of Westwood students are much more likely to take away their students’ car as a punishment than either Liberty Hill parents or Round Rock High School parents. It appears that “grounding” is used most often in Round Rock while cutting an allowance is used most in Liberty Hill
59. Go to a local grocery store and collect these data for at least 75 breakfast cereals: cereal name; grams of sugar per serving; and the shelf location (bottom, middle, or top). Group the data by shelf location and use three boxplots to compare the sugar content by shelf location.
60. Use computer software to simulate 1,000 flips of a fair coin. Record the fraction of the flips that were heads after 10, 100, and 1,000 flips. Repeat this experiment 100 times and then use three histograms to summarize your results.
61. Estimate the average number of hours that students at this school sleep each day, including both nighttime sleep and daytime naps. Also estimate the percentages that have been up all night without sleeping at least once during the current semester.
62. Estimate and compare the average words per sentence in *People*, *Time*, and *New Republic*.
63. Estimate the percentage of the seniors at this college who regularly read a daily newspaper, the percentage who can name the two U.S. senators from their home state, the percentage who are registered to vote, and the percentage who would almost certainly vote if a presidential election were held today.

64. Conduct a taste test of either Coke versus Pepsi or Diet Coke versus Diet Pepsi. Survey at least 50 randomly selected students who identify themselves beforehand as cola drinkers with a definite preference for one of the brands you are testing. Give each subject a cup of each cola that has been coded in a way known only to you. Calculate the fraction of your sample whose choice in the taste test matches the brand identified beforehand as their favorite. (Do not tell your subjects that this is a test of their ability to identify their favorite brand; tell them it is a test of which tastes better.) Determine the two-sided p-value for a test of the null hypothesis that there is a 0.5 probability that a cola drinker will choose his or her favorite brand.
65. Find five avid basketball players and ask each of them to shoot 100 free throws. Do not tell them the purpose of this exercise, which is to determine if a missed free throw is equally likely to bounce to the same or opposite side as their shooting hand. Use your data for each of these players to calculate the two-sided p-value for testing the null hypothesis that a missed free throw by this player is equally likely to bounce to either side.
66. Ask 50 female students these four questions: Among female students at this college, is your height above average or below average? Is your weight above average or below average? Is your intelligence above average or below average? Is your physical attractiveness above average or below average? Ask 50 male students these same questions (in comparison to male students at this college). Try to design a survey procedure that will ensure candid answers. For each gender and each question, test the null hypothesis that  $p = 0.5$ .
67. Young children who play sports are often separated by age. In 1991, for example, children born in 1984 might have been placed in a 7-year-old league while children born in 1983 were placed in an 8-year-old league. Someone born in January 1984 is eleven months older than someone born in December 1984. Because coaches give more attention and playing time to better players, children with early birth dates may have an advantage when they are young that cumulates over the years. To test this theory, look at a professional sport and see how many players have birth dates during the first six months of the year.
68. College students are said to experience the Frosh 15 -- an average weight gain of 15 pounds during their first year at college. Test this folklore by asking at least 100 randomly selected students how much weight they gained or lost during their first year at college. Determine the two-sided p-value for testing the null hypothesis that the population mean is a 15-pound gain, and also determine a 95 percent confidence interval for the population mean.
69. What percentage of the seniors at your college expects to be married within five years of graduation? What percentage expects to have children within five years of graduation? How many biological children do the seniors at your college expect to have during their lives? Do males and females differ in their answer to these questions?
70. Ask a random sample of at least 50 students the following question: "During the school year, how many hours a week do you spend, on average, on school-related work -- for example, reading books, attending class, doing homework, and writing papers?" Ask a random sample of at least 25 professors this question: "During the school year, how many hours a week do you spend, on average, on school-related work -- for example, preparing lectures, teaching, grading, advising, serving on committees, and doing research?" Determine the p-value for a test at the 5 percent level of the null hypothesis that the two population means are equal.
71. Ask at least 100 randomly selected college students to write down their grade point average (GPA) and to indicate where they typically sit in large classrooms: in the very front, towards the front, in the middle, towards the back, or in the very back. If feasible, restrict your sample to students who are taking the same class or similar classes.
72. Ask randomly selected college students if they have had a serious romantic relationship in the past two years and, if so, to identify the month in which the most recent relationship began. When you have found 120 students who answer yes and can identify the month, make a chi-square test of the null hypothesis that each month is equally likely for the beginning of a romantic relationship.
73. Ask 50 randomly selected students this question and then compare the male and female responses: "You have a coach ticket for a nonstop flight from Los Angeles to New York. Because the flight is overbooked, randomly selected passengers will be allowed to sit in open first-class seats. You are the first person selected. Would you rather sit next to: (a) the U.S. president; (b) the president's wife; or (c) Michael Jordan?"
74. For each of the 50 states, calculate Bill Clinton's percentage of the total votes cast for the Democratic and Republican presidential candidates in 1992; do not include votes for other candidates. Do the same for the 1996 election. Is there a statistical relationship between these two sets of data? Are there any apparent outliers or anomalies?
75. Select an automobile model and year (at least three years old) that is of interest to you -- for example, a 1993 Saab 900S convertible. Now find at least 30 of these cars that for sale (either from dealers or private owners) and record the odometer mileage (x) and asking price (y). As best you can, try to keep the cars as similar as possible. For example, ignore the car

color, but do not mix together 4-cylinder and 6-cylinder cars or manual and automatic transmissions. Estimate the equation  $y = a + bx + e$  and summarize your results.

76. Pick a date and approximate time of day (for example, 10:00 in the morning on April 1) for scheduling nonstop flights from an airport near you to at least a dozen large U.S. cities. Determine the cost of a coach seat on each of these flights and the distance covered by each flight. Use your data to estimate a simple linear regression model with ticket cost the dependent variable and distance the explanatory variable. Are there any outliers?
77. Go to a large bookstore that has a prominent display of best-selling fiction and nonfiction hardcover books. For each of these two categories, record the price and number of pages for at least ten books. Use these data to estimate a multiple regression model with price the dependent variable and three explanatory variables: a dummy variable that equals 0 if nonfiction and 1 if fiction, the number of pages, and the dummy variable multiplied by the number of pages. Are there any apparent outliers in your data?
78. Ask 100 randomly selected students to estimate their height and the heights of both of their biological parents. Also note the gender of each student in your sample. Now estimate a multiple regression model with the student's height as the dependent variable and the student's gender, mother's height, and father's height as the explanatory variables.
79. Ask 50 female students these four questions: Among female students at this college, is your height above average or below average? Is your weight above average or below average? Is your intelligence above average or below average? Is your physical attractiveness above average or below average? Ask 50 male students these same questions (in comparison to male students). Try to design a survey procedure that will ensure candid answers. For each gender and each question, test the null hypothesis that  $p = 0.5$ . (Alternatively, this can be done as a female/male chi-square test.)
80. Ask 100 randomly selected students if, aside from the obvious gender differences, they most resemble their biological mother or father. (Evolutionary psychologists suggest that people are more likely to say that a child resembles the father—apparently so that the father will be more likely to protect and care for the child.) For each gender, test the null hypothesis that  $p = 0.5$ . (Alternatively, this can be done as a female/male chi-square test.)
81. Calculate the percentage change in the Dow Jones Industrial Average from the close on Thursday the 12th to the close on Friday the 13th for every Friday the 13th beginning in 1980. Is the average percentage change substantial? Determine the two-sided  $p$  value for a test of the null hypothesis that the mean percentage change is 0.
82. Ask 30 people to tell you when 30 seconds has elapsed, perhaps offering a prize if they are within 1 second. Think of a way to conduct this experiment that avoids this potential problem: if you time the 30 seconds by looking at your watch, the subject may be able to draw inferences from your facial expressions. Do your data indicate that people are more likely to underestimate or overestimate the passage of time?
83. People experiencing an earthquake often grossly overestimate how long the quake lasts; for example reporting that a 6-second quake lasted 30 seconds. Show a random sample of people some memorable event, such as a snippet of loud music or you dancing, and then ask them how long this event lasted. Do your data indicate that people are more likely to underestimate or overestimate the how long the event lasted?
84. Use a newspaper or national news magazine to collect pictures of the winner of the last presidential election, some printed a month before the election and an equal number printed a month after the election. All the pictures should be full face shots of approximately equal sizes. Do not otherwise screen the photos for being attractive or unattractive. Ask a random sample of students to pick the photo that they consider to be the most flattering and the photo that they consider being the least flattering. Are their choices equally likely to be from the pre-election and post-election categories?
85. Use a newspaper or national news magazine to collect pictures of the Richard Nixon, some printed a month before his defeat in the 1962 election for governor of California and an equal number printed a month after the election. All the pictures should be full face shots of approximately equal sizes. Do not otherwise screen the photos for being attractive or unattractive. Ask a random sample of students to pick the photo that they consider to be the most flattering and the photo that they consider being the least flattering. Are their choices equally likely to be from the pre-election and post-election categories?
86. Compare the prices of men's and women's T-shirts.
87. Compare the prices of men's and women's shaving cream
88. Select a grocery store chain and compare the prices at stores in two different areas of town.
89. Estimate and compare the average words per sentence in the *New York Times* and in a local newspaper.

90. Ask a random sample of students or professors to grade two short essays. One might be better organized, but have more grammatical mistakes. For half of the sample, the two names on the essays are female (or, even better, the language in the essays reveals the authors to be female). For the other half, the names or language are male. Compare the grades given to the females with those given to the males. (This can also be done as an ANOVA or chi-square test.)
91. Use secret ballots to survey student preferences for the next president of the United States. On half of the ballots, list the likely Republican candidate first; on the other half, list the likely Democratic candidate first.
92. Go to a local cemetery and compare the number and size of male and female tombstones.
93. Post a sign on the main entrance to a campus building requesting the use of a less convenient entrance; for example, "Please use the door on the north side of building." From an inconspicuous location, observe how many people ignore the sign and use the main entrance and how many people do not use the main entrance. Compare the behavior of students and professors or males and females. Try to pick a building and time when traffic is light, so that large numbers do not try to enter simultaneously.
94. Choose two categories A and B based on either race or gender. Select 10 photographs of Category A people and 10 photographs of Category B people. These should not be pictures of celebrities or anyone else that your subjects will recognize. Show each subject 5 of the A pictures and 5 of the B pictures mixed together. Then show each subject all 20 pictures and ask them to select the 10 pictures that they had been shown previously. Compare the accuracy of subjects who are in Category A with the accuracy of subjects who are in Category B.
95. What fraction of *New York Times* obituaries are for New Yorkers? Compare this with the fraction of obituaries in another major newspaper that are for local citizens; for example, Los Angeles Times obituaries for Californians.
96. Estimate and compare the average words per sentence in *People*, *Time*, and *New Republic*.
97. Compare the length of *New York Times* obituaries with the occupations of the deceased.
98. Compare the length of the descriptions in *Who's Who in America* with the person's occupation.
99. Test whether the length of the descriptions in *American Men of Science* depends on the person's scientific field.
100. Administer the following four tests to at least 50 subjects, and then apply a chi-square test to the six possible pairs of tests: a with b, a with c, and so on:
  - a. Ask the subject to stand with his or her back to you. Then ask the subject to jump around in a single motion to face you. Record whether the person jumps clockwise (pushing off with a dominant left foot) or counterclockwise (pushing off with a dominant right foot).
  - b. Ask the subject to look at an object 10 feet away through a tube made with the hands held a foot in front of his or her face. Close or cover first one eye and then the other and record whether the subject can still see the object through the tube when the left eye is open (left-eye dominance) or when the right eye is open (right-eye dominance).
  - c. Ask the subject to put his or her hands together behind the head, with the fingers interlaced. Record whether the thumb on the bottom (the dominant thumb) is from the left or right hand.
  - d. Ask the subject whether he or she is left-handed or right-handed.
101. The nine positions on a baseball team can be divided into four categories: pitcher, catcher, the four infielders, and the three outfielders. Collect all the data you can on major league baseball managers and test the null hypothesis that, among those managers who played baseball, the probabilities of having played in these four categories are  $1/9$ ,  $1/9$ ,  $4/9$ , and  $3/9$ , respectively.
102. Go to a local grocery store and collect these data for at least 75 breakfast cereals: cereal name; grams of sugar per serving; and the price per ounce (or gram). If the store you select does not have at least 75 breakfast cereals, then collect data from another store too. Use these data to estimate the simple regression model with price as the dependent variable and sugar as the explanatory variable.
103. Have students guess their height, and then measure their actual height.
104. Favorite color jelly beans; a survey was taken of a random sample of the student body as to their favorite color jelly bean and then separated by gender.

105. Candidate preferences; a survey was taken of a random sample of the student body as to which presidential candidate they had favored before the November 1992 election and which candidate they thought would be doing the best job in the spring of 1993. Relationships between initial candidate preference, likelihood of change and party affiliation were examined.
106. Weight room facilities; a survey was taken of a random sample of users of the new campus weight room as to their satisfaction level. Users were categorized by the extent of their use of the facilities, by gender and by whether they were varsity or non-varsity athletes.
107. Changes in physical condition, eating habits and exercise habits; a random sample of freshmen were surveyed to see if their physical condition or eating and exercising habits had changed from high school to college. Results were tabulated for all freshmen and by gender.
108. Economy vs. name brand laundry detergent; two different laundry detergents were compared as to their effectiveness in removing stains. An unbiased judge ranked the cleanliness of socks, stained with four different types of stains and then washed in one of the two types of detergents.
109. Mailing times; the length of time letters took to arrive at several different destinations, with and without zip codes, was measured (this was a suggestion from the textbook). Letters were sent to six different towns in different regions of the country, two with and two without zip codes.
110. Car manufacturers; the number of foreign and domestic cars passing a given location during a specified time period were recorded. Several similar intersections in different neighborhoods near Philadelphia were observed to see if the geographic location affected the ratio.
111. Church attendance; the attendance records at a particular church were examined for Sundays when Holy Communion was offered and for Sundays when Holy Communion was not offered to see if this had any effect.
112. Fraternity GPAs; the average grade point averages of all the students in a fraternity were compiled by semester and then grouped depending on the semester during which the student pledged. The GPAs were then compared with the average GPA of the general student population.
113. Temperature and homicides; the average high temperature by month for Philadelphia (compiled from newspapers) and the number of homicides per month (obtained from the District Attorney's office) for a three year period were examined to see if there was a correlation between temperature and the number of homicides.
114. Motor vehicle accidents, fatalities and DWI arrests; data from the Statistical Abstract of the United States were used to examine the numbers of registered drivers and the rate of motor vehicle accidents, fatalities, and driving while under the influence arrests in the United States. The data were given for all drivers and then broken down by gender and by different age groups. The data were examined for several different years to see if there were any trends.
115. Does coaching improve SAT or ACT scores?
116. Do pets help heart attack patients recover faster?
117. Do people with a high IQ have a specific personality trait?
118. Do states with capital punishment have a lower homicide rate than those states without?
119. What variables contribute to the healthy growth of plants?
120. Does vitamin C prevent colds?
121. Which route to school is the fastest?
122. How much weight does a Big Mac a day add on to a body? How much difference does it make if you supersize?
123. Which NBL franchise seems to do the best job at pricing (paying) their players? Are general managers paid well for their services? Are any grossly under- or overpaid?
124. How much do people trust the unsolicited input of a stranger vs. someone they know? Does it matter what your race or gender is? Or what it is that you are wearing?
125. Is it really better to have loved and lost than to have never loved before?



126. Are younger people using their thumbs more for things like pushing elevator buttons (because of cell phones and video games)?
127. Between diet, temperature, and amount of practice, what has the greatest impact on running times?
128. Do people tend to enter into professions that are like what their parents did? How much is this tendency, if there is one, affected by the quality of their relationship with their parents? And which has more affect – the father's relationship, the mother's, or does it depend on the quality of the parent-child relationship, or perhaps on the match of personality?
129. What best predicts whether high school friends will keep in close touch years after graduation?
130. Compare proportions of males vs. females who think that they are more/less attractive (intelligent) than their peers.
131. Are males or females better at identifying the gender of handwriting?
132. Are males or females better at face recognition?
133. Are name brands preferred over generic brands?
134. Are students better able to recall words if they are related?
135. Do students look both ways before crossing the street?
136. Are there differences in self-esteem based on gender?
137. Do students ignore caution tape across a door or abide by it?
138. Are males or females more likely to help a student who has dropped an armful of books?
139. Geography: which gender is better at identifying countries on a world map?
140. Dog Gender Identification: Are people more likely to assume that large dogs are males and small dogs are females?
141. Do students with a Chinese heritage have better pitch recognition in music?
142. Do males prefer vanilla ice cream?
143. Does birth order relate to athletic performance, that is, are older siblings more apt to be more competitive in athletics?
144. Are Classics students better able to translate a paragraph written in another romance language than students who know only a romance language and attempt to translate a different romance language?
145. Do students who are heavily involved in community service have higher GPAs than those who are not involved in community service?
146. Are males more likely than females to pick up a chocolate bar on the sidewalk?
147. How hot are you? Do males rate themselves higher than females rate themselves?
148. Pianist finger lengths - do pianist have longer fingers in proportion to hand length?
149. Is more expensive bottled water really preferable to less expensive waters?
150. Moral decisions: Do males follow principles while females follow empathy and caring?
151. How does parenting strictness affect GPA, extracurricular involvement, and self-satisfaction? (Tiger Mom)
152. Which Gender Knows the News Better?
153. Is the Academic Playing Field Fair for students with the Introduction of Smartphones: Study of the Relationship between Financial Aid and Smartphone Usage

154. Comparison of academic performance to athletic performance
155. What political trends exist in our town?
156. Octave matching – is the human ear capable of matching octaves?
157. Do students who do not carry a tray in the dining hall consume fewer calories?
158. Family roles – what is the role of women and men in our households? Are there any trends?