

17. Tennis Instant Replay The Hawk-Eye electronic system is used in tennis for displaying an instant replay that shows whether a ball is in bounds or out of bounds so players can challenge calls made by referees. In the most recent U.S. Open (as of this writing), singles players made 611 challenges and 172 of them were successful with the call overturned. Use a 0.01 significance level to test the claim that fewer than $1/3$ of the challenges are successful. What do the results suggest about the ability of players to see calls better than referees?

18. Perception and Reality In a presidential election, 308 out of 611 voters surveyed said that they voted for the candidate who won (based on data from ICR Survey Research Group). Use a 0.10 significance level to test the claim that among all voters, the percentage who believe that they voted for the winning candidate is equal to 43%, which is the actual percentage of votes for the winning candidate. What does the result suggest about voter perceptions?

19. Cell Phones and Cancer In a study of 420,095 Danish cell phone users, 135 subjects developed cancer of the brain or nervous system (based on data from the *Journal of the National Cancer Institute* as reported in *USA Today*). Test the claim of a somewhat common belief that such cancers are affected by cell phone use. That is, test the claim that cell phone users develop cancer of the brain or nervous system at a rate that is different from the rate of 0.0340% for people who do not use cell phones. Because this issue has such great importance, use a 0.005 significance level. Based on these results, should cell phone users be concerned about cancer of the brain or nervous system?