1. In a Pew Research Center poll of 745 randomly selected adults, 589 said that it is morally wrong to not report all income on tax returns. Use a 0.01 significance level to **test** the **claim** that **75%** of adults say that it is morally wrong to not report all income on tax returns.

2. 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. In the first U.S. Open that used the Hawk-Eye system, players could challenge calls made by referees. The Hawk-Eye system was then used to confirm or overturn the referee’s call. Players made 839 challenges, and 327 of those challenges were successful with the call overturned (based on data reported in USA Today). Use a 0.01 significance level to test the claim that the proportion of challenges that are successful is greater than 1 3%.

3. The company Drug Test Success provides a “1-Panel-THC” test for marijuana usage. Among 300 tested subjects, results from 27 subjects were wrong (either a false positive or a false negative). Use a 0.05 significance level to test the claim that less than 10% of the test results are wrong.

4. A simple random sample of 50 adults is obtained, and each person’s red blood cell count (in cells per microliter) is measured. The sample mean is 5.23. The population standard deviation for red blood cell counts is 0.54. Use a 0.01 significance level to test the claim that the sample is from a population with a mean less than 5.4, which is a value often used for the upper limit of the range of normal values.

5. A simple random sample of 25 filtered 100 mm cigarettes is obtained, and the tar content of each cigarette is measured. The sample has a mean of 13.2 mg and a standard deviation of 3.7 mg. Use a 0.05 significance level to test the claim that the mean tar content of filtered 100 mm cigarettes is less than 21.1 mg, which is the mean for unfiltered king size cigarettes.

6. The heights are measured for the simple random sample of supermodels Crawford, Bundchen, Pestova, Christenson, Hume, Moss, Campbell, Schiffer, and Taylor. Those heights have a mean of 70.0 in. and a standard deviation of 1.5 in. Use a 0.05 significance level to test the claim that supermodels have heights with a standard deviation less than 2.5 in.

