**Which Method?**

State which statistical method would be most appropriate for each question or situation and explain your reasoning.

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| Interval for a single proportion | Test for a single proportion | Chi-square test for association |
| Interval for a single mean | Test for a single mean | Simple linear regression |
| Interval for a difference in proportions | Test for a difference in proportions |  |
| Interval for a difference in means | Test for a difference in means |  |

1. Anthropologists have found two burial mounds in the same region. They know that several different tribes lived in the region and that the tribes have been classified according to different lengths of skulls. They measure the skulls found in each burial mound and wish to determine if the two mounds were made by different tribes.
2. Researchers were commissioned by the Violence In Children’s Television Investigative Monitors (VICTIM) to study the frequency of depictions of violent acts in Saturday morning TV fare. They selected a random sample of 40 shows which aired during this time period over a 12-week period. Suppose that 28 of the 40 shows in the same were judged to contain scenes depicting overtly violent acts. How should they use this information to make a statement about the population of all Saturday morning TV shows?
3. The Career Planning Office is interested in seniors’ plans and how they might relate to their majors. A large number of students are surveyed and classified according to their major (Natural Science, Social Science, Humanities) and future plans (Graduate School, Job, Undecided). Are the type of major and future plans related?
4. How many times a day do humans urinate, on average?
5. In one of his adventures, Sherlock Holmes found footprints made by the criminal at the scene of a crime and measured the distance between them. After sampling many people, measuring their height and length of stride, he confidently announced that he could predict the height of the suspect. How?
6. Is there an association between whether or not a person is smiling and whether or not the sun is shining?
7. What percentage of Americans support same-sex marriage?
8. Is the percentage of the national budget spent on health care associated with life expectancy for countries?
9. People were recruited for a study on weight loss, in which participants were randomly assigned to one of two groups. Group 1 was given exercise instructions and group 2 was given no exercise instructions. The researchers are interested in estimating how much more weight was lost on average by people who were given exercise instructions, as opposed to those who weren’t.
10. A professional figure skater was interested in which of two jumps she landed more consistently. She did 50 double loops (landed 47 successfully) and 50 double flips (landed 48 successfully), and wanted to determine whether this was enough evidence to conclude that she had a higher success rate with one jump than another.