1. Sleazy P. Martini has a coin which may or not be fair. Suspicious that Sleazy P. might be up to no good, you record some data.

Out of 46 tosses of the coin, 28 come up heads.

With this data, you decide to carry out a test of significance on the fairness of this coin.

If the guidelines for the test are met, compute the z-statistic for the test of significance described above. If the guidelines for the test are not met, then say so.

A. The z-statistic is 1.47.

B. The z-statistic is 1.56.

C. The z-statistic is 1.55.

D. The z-statistic is 1.54.

E. The z-statistic is 1.49.

F. The z-statistic is 1.41.

G. The z-statistic is 1.4.

H. The guidelines for the test are not met.

2. Suppose we are testing the hypotheses
$$H_0 : p = 0.25$$
$$H_a : p \neq 0.25$$
This is an example of a:

A. 1-tailed test.

B. 2-tailed test.

3. Toastmasters International cites a report by Gallop Poll that 40% of Americans fear public speaking. A student believes that less than 40% of students at her school fear public speaking. She randomly surveys 121 schoolmates and finds that 48 report they fear public speaking.

If the guidelines for the test are met, compute the z-statistic for the test of significance to determine if the percent at her school is less than 40%. If the guidelines for the test are not met, then say so.

A. The z-statistic is -0.07.

B. The z-statistic is -0.16.

C. The z-statistic is -0.12.

D. The z-statistic is -0.01.

E. The z-statistic is -0.11.

F. The z-statistic is -0.08.

G. The z-statistic is -0.04.

H. The guidelines for the test are not met.

4. According to an article in Bloomberg Businessweek, New York City's most recent adult smoking rate is 14%. Suppose that a survey is conducted to determine this year's rate and that out of 267 randomly chosen N.Y. City residents, 52 reply that they smoke. Conduct a hypothesis test to determine if the rate is still 14% or if it has changed.

If the guidelines for the test are met, compute the p-value for the test of significance described above. If the guidelines for the test are not met, then say so.

A. The p-value is 0.0188.

B. The p-value is 0.0168.

C. The p-value is 0.0098.

D. The p-value is 0.0068.

E. The p-value is 0.0158.

F. The guidelines for the test are not met.

G. The p-value is 0.0128.

H. The p-value is 0.0118.

5. Does the order in which wine is presented make a difference in which wine is preferred? In one study, researchers had two choices of wine presented to each subject one at a time. The subjects were then asked to choose his or her preferred wine. However, unknown to the subjects, both wines were the same.

Suppose that out of a random sample of 34 subjects, 24 chose the first wine.

As a researcher, you suspect that people tend to prefer the first wine more often than the second wine despite there being no real difference. To test your suspicion, you carry out a test of significance on your data.

You decide upon 0.05 as your level of significance. If the guidelines for the test are met, state your conclusion for the test of significance described above. If the guidelines for the test are not met, then say so.

A. We keep the null hypothesis. That is, we don't have significant evidence that people tend to prefer the first choice.

B. The guidelines for the test are not met.

C. We reject the null hypothesis. That is, there is significant evidence that people tend to prefer the first choice.

6. Sleazy P. Martini has a coin which may or not be fair. Suspicious that Sleazy P. might be up to no good, you record some data.

Out of 65 tosses of the coin, 28 come up heads.

With this data, you decide to carry out a test of significance on the fairness of this coin.

If the guidelines for the test are met, compute the p-value for the test of significance described above. If the guidelines for the test are not met, then say so.

A. The p-value is 0.2678.

B. The p-value is 0.2668.

C. The p-value is 0.2578.

D. The p-value is 0.2628.

E. The p-value is 0.2658.

F. The p-value is 0.2698.

G. The guidelines for the test are not met.

H. The p-value is 0.2718.

7. Does the order in which wine is presented make a difference in which wine is preferred? In one study, researchers had two choices of wine presented to each subject one at a time. The subjects were then asked to choose his or her preferred wine. However, unknown to the subjects, both wines were the same.

Suppose that out of a random sample of 84 subjects, 55 chose the first wine.

As a researcher, you suspect that people tend to prefer the first wine more often than the second wine despite there being no real difference. To test your suspicion, you carry out a test of significance on your data.

If the guidelines for the test are met, compute the p-value for the test of significance described above. If the guidelines for the test are not met, then say so.

A. The p-value is 0.0033.

B. The p-value is 0.0013.

C. The guidelines for the test are not met.

D. The p-value is -0.0067.

E. The p-value is 0.0023.

F. The p-value is -0.0037.

G. The p-value is -0.0047.

H. The p-value is 0.0103.

8. According to an article in Bloomberg Businessweek, New York City's most recent adult smoking rate is 14%. Suppose that a survey is conducted to determine this year's rate and that out of 83 randomly chosen N.Y. City residents, 9 reply that they smoke. Conduct a hypothesis test to determine if the rate is still 14% or if it has changed.

If the guidelines for the test are met, compute the z-statistic for the test of significance described above. If the guidelines for the test are not met, then say so.

A. The guidelines for the test are not met.

B. The z-statistic is -0.82.

C. The z-statistic is -0.8.

D. The z-statistic is -0.74.

E. The z-statistic is -0.89.

F. The z-statistic is -0.78.

G. The z-statistic is -0.77.