Hypothesis Test for the SRCC

Writing Hypotheses - Solutions

1. What would the hypotheses be for an investigation into the claim that the SRCC between two variables is negative?

- ☒ H_0: x and y are independent
- ☐ H_1: x and y are independent
- ☐ H_0: x and y are not independent
- ☐ H_1: x and y are not independent
- ☐ H_0: there is a positive correlation between x and y
- ☐ H_1: there is a positive correlation between x and y
- ☐ H_0: there is a negative correlation between x and y
- ☒ H_1: there is a negative correlation between x and y

2. What would the hypotheses be for an investigation into the claim that there is no correlation between two variables?

- ☒ H_0: x and y are independent
- ☐ H_1: x and y are independent
- ☐ H_0: x and y are not independent
- ☒ H_1: x and y are not independent
- ☐ H_0: there is a positive correlation between x and y
- ☐ H_1: there is a positive correlation between x and y
- ☐ H_0: there is a negative correlation between x and y
- ☐ H_1: there is a negative correlation between x and y

3. What would the hypotheses be for an investigation into the claim that the SRCC between two variables is -0.254?

- ☒ H_0: x and y are independent
- ☐ H_1: x and y are independent
- ☐ H_0: x and y are not independent
- ☐ H_1: x and y are not independent
- ☐ H_0: there is a positive correlation between x and y
- ☐ H_1: there is a positive correlation between x and y
- ☐ H_0: there is a negative correlation between x and y
- ☒ H_1: there is a negative correlation between x and y

4. What would the hypotheses be for an investigation into the claim that the SRCC between two variables is +0.848?

- ☒ H_0: x and y are independent
- ☐ H_1: x and y are independent
- ☐ H_0: x and y are not independent
- ☐ H_1: x and y are not independent
- ☐ H_0: there is a positive correlation between x and y
- ☒ H_1: there is a positive correlation between x and y
- ☐ H_0: there is a negative correlation between x and y
- ☐ H_1: there is a negative correlation between x and y

5. What would the hypotheses be for an investigation into the claim that there is a positive correlation between the number of TV channels subscribed to and the average number of hours of TV watched per week?

- ☒ H_0: x and y are independent
- ☐ H_1: x and y are independent
- ☐ H_0: x and y are not independent
- ☐ H_1: x and y are not independent
- ☐ H_0: there is a positive correlation between x and y
- ☒ H_1: there is a positive correlation between x and y
- ☐ H_0: there is a negative correlation between x and y
- ☐ H_1: there is a negative correlation between x and y

6. What would the hypotheses be for an investigation into the claim that there is a correlation between the weight of a volunteer and the height at which they are willing to jump from?

- ☒ H_0: x and y are independent
- ☐ H_1: x and y are independent
- ☐ H_0: x and y are not independent
- ☒ H_1: x and y are not independent
- ☐ H_0: there is a positive correlation between x and y
- ☐ H_1: there is a positive correlation between x and y
- ☐ H_0: there is a negative correlation between x and y
- ☐ H_1: there is a negative correlation between x and y