Hypothesis-testing exercise - solutions

On a normal day the mean number of patrons that the mall gets is 281.77. You think that for rainy days average is larger. The mall was observed for 43 days and the observed rainy day mean was 297.44 patrons and the standard deviation was 83.73. Conduct the appropriate hypothesis test using a significance level of .10.

The Null and Alternative Hypotheses Are

- $H_0$: $\mu = 281.77$
- $H_1$: $\mu \neq 281.77$

The Cast of Characters Are

- $\bar{x} = 297.44$
- $n = 43$
- $s = 83.73$

The Z Critical Value Is 1.28
The Z-Score Is: 1.23

- Fail to Reject the null hypothesis
- Reject the null hypothesis

A newspaper has reported that the average person spends 14.81 hours watching television per week. You believe that the true average is different. You survey 59 people and find the sample mean to be 14.17 and the standard deviation 2.26. Conduct the appropriate hypothesis test using a significance level of .10.

The Null and Alternative Hypotheses Are

- $H_0$: $\mu = 14.81$
- $H_1$: $\mu \neq 14.81$

The Cast of Characters Are

- $\bar{x} = 14.17$
- $n = 59$
- $s = 2.26$

The Z Critical Value Is 1.645
The Z-Score Is: 2.17

- Fail to Reject the null hypothesis
- Reject the null hypothesis

At your restaurant, the average person spends $12.43 on their meal. You have a coupon for 10% off the entire bill and expect the average bill to change. You kept track of 43 customers using the coupon and found the mean bill to be $13.65 and the standard deviation was $3.65. Conduct the appropriate hypothesis test using a significance level of .06.

The Null and Alternative Hypotheses Are

- $H_0$: $\mu = 12.43$
- $H_1$: $\mu \neq 12.43$

The Cast of Characters Are

- $\bar{x} = 13.55$
- $n = 43$
- $s = 3.65$

The Z Critical Value Is 1.96
The Z-Score Is: 2.07

- Fail to Reject the null hypothesis
- Reject the null hypothesis

During the 90's, the average number of fatal accidents per day was 749.42. You think that this average will be different in the new decade. For 47 days in the current decade, you calculated the mean number of fatal accidents per day to be 782.94 and the standard deviation to be 101.61. Conduct the appropriate hypothesis test using a significance level of .06.

The Null and Alternative Hypotheses Are

- $H_0$: $\mu = 749.42$
- $H_1$: $\mu \neq 749.42$

The Cast of Characters Are

- $\bar{x} = 782.94$
- $n = 47$
- $s = 101.61$

The Z Critical Value Is 1.96
The Z-Score Is: 2.26

- Fail to Reject the null hypothesis
- Reject the null hypothesis