Homework 8

of

STAT 3355 Data Analysis for Statisticians & Actuaries

Due: 11:30 am

April 25 (Monday), 2022

Problem 1 (2 points)

In the United States in 2007, the proportion of adults age 21-24 who had no medical insurance was 28.1%. A survey of 75 recent college graduates in this age range finds that 30 of them are without insurance. Does this support a difference from the nationwide?

- Perform a two-sided significance test for a proportion, following the procedure of seven steps in the lecture note (choose a significance level of 0.05).

- Use the related function in R to report the p-value. What's your conclusion based on the result?

Problem 2 (4 points)

In the past 30 days, a cell-phone store has sold 150 Apple iPhone and had 14 returned. It has sold 125 Samsung Galaxy and had 15 returned. Is there statistical evidence that Apple has a smaller chance of being returned than Samsung?

- Perform a one-sided significance test for proportion difference, following the procedure of seven steps in the lecture note (choose a significance level of 0.05).

- Use the related function in R to report the p-value. What's your conclusion based on the result?

Problem 3 (4 points)

For the `babies` dataset in the package `UsingR`, the variable `age` contains the mother's age and the variable `dage` contains the father's age.

- Perform a two-sided significance test of the null hypothesis of equal ages against the alternative that the ages are different in the sampled population, following the procedure of seven steps in the lecture note (choose a significance level of 0.05).

- Use the related function in R to report the p-value. What's your conclusion based on the result?