QMM 1001 - Statistics for Data Analytics Lab 10   /15

Create and submit an R script which, when run, will print the answers to the following questions. Your R script must include a title with your name and student number and comments for each question number and letter.

1. **(7 marks)** Since many people have trouble assembling furniture, a supplier has developed what it hopes will be easier instructions. The supplier's research indicates that when using their old instructions, 92% of people will correctly assemble their furniture on their first attempt. The supplier tests their new instructions on a sample of 300 people, 283 of which correctly assembled the furniture on their first attempt.
    a. Test the hypothesis that the new instructions have increased the number of people who can correctly assemble the furniture using an alpha level of 0.05. Use the one-sided z test function written in class (3 marks).
    b. Change the alpha level to 0.10. How does that change your decision? (1 mark)

2. **(8 marks)** Write a function to perform a two-sided z test for a proportion. Using your function, answer the following question: Toronto, Montreal and Vancouver accounted for 30% of Canadian retail sales in a recent year. You interview a random sample of Canadian residents this year to see whether that proportion has changed. Suppose that all assumptions are met and you test the hypotheses H_0: p = 0.30 vs. H_A: $p \neq$ 0.30 at the 0.05 significance level. A sample of size 500 results in a sample proportion of 0.25.

Save your R Script as: Last Name, First Name LAB 10

Upload your R Script to the "R Assignment – Lab 10" drop box on Moodle before December 3rd, 2018 at 11:59 PM.