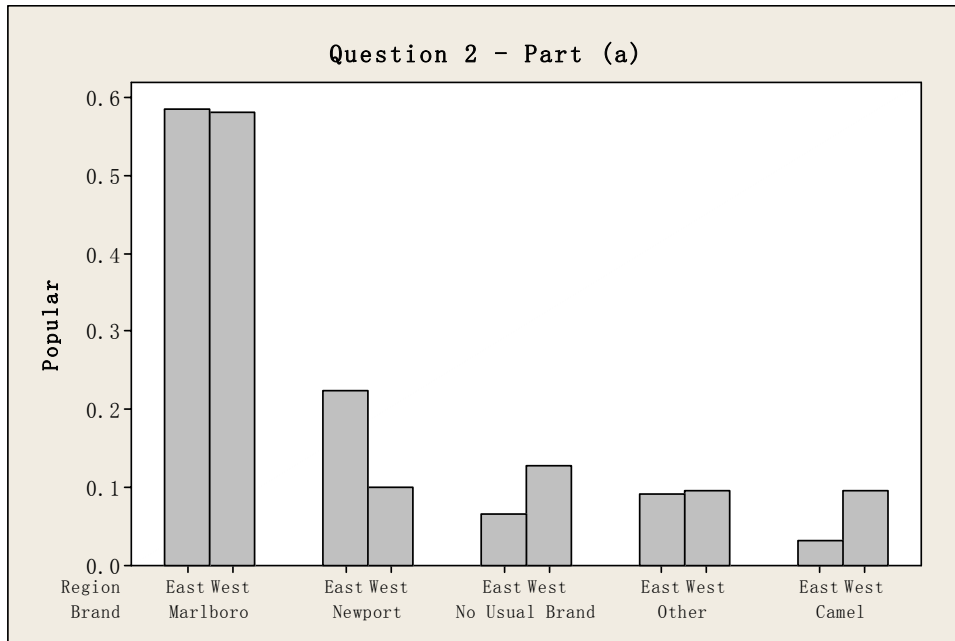


Arts/ Sci 2R06 Test #1 Solution

- Question1:** i) manufacturer-qualitative
 ii) Vehicle type- qualitative
 iii) weight-quantitative (units not provided)
 iv) horse power-quantitative (units not provided)
 v) gas mileage for city driving-quantitative (unit: mpg)
 vi) gas mileage for highway driving-quantitative (unit: mpg)

Question2:

a)

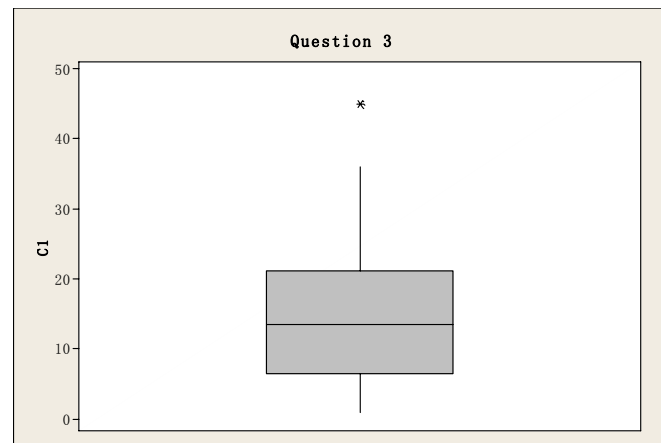


b) Cigarette brand: **Marlboro** is the favorite brand in both regions, with nearly identical percentages of votes among eighth graders from the East and West. **Newport** is much more preferred in the East than the west, and the Newport cigarette brand was second favorite for the East but not as highly favored by the west. The **camel** brand was not preferred by the East. And **the other brand** category had approximately 10% preference for both East - West regions. Eighth graders in the west have a greater preference for any variety (**no usual**) than in the East.

Question 3:

- a) Rank the measurements from smallest to largest
 1,3,3,3,3,3,4,4,4,5,7,7,7,9,10,10,10,11,12,12,13,14,15,16,17,17,17,17,18,19,19,21,22,23,25,27,27, 29,32,35,36,45.
 Position of $Q1=0.25(n+1)=10.75$; position of $Q3=0.75(n+1)=32.25$
 Therefore, $Q1=5+0.75(7-5)=6.5$; $Q3=21+0.25(22-21)=21.25$; Median=13.5
 Five number Summary: 1, 6.5, 13.5, and 21.25,45.

b)



The distribution is skewed to the right and there is one outlier.

Question 4:

a) 2.2 1234

2.2 677789

2.3 23

2.3 68

2.4

2.4 56

b) Mean=2.30, Standard deviation=0.0762

c) There is an empty stem before the largest two values. Z-score (for the largest = $(2.46-2.30)/0.076 = 2.08$, the smallest = $(2.21-2.30)/0.076 = -1.18$) reveals that there is no outlier, and the distribution is skewed to the right.