Practice Quiz 2

Statistics 200
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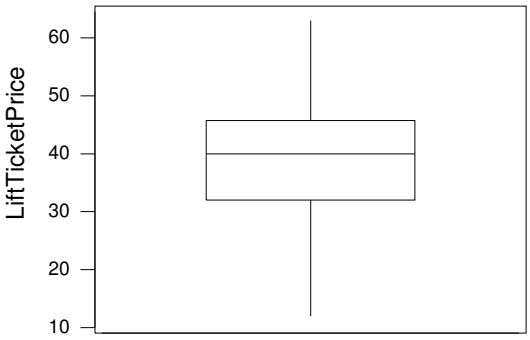
1. (3 pts.) This boxplot shows prices for adult weekend ski lift tickets in various resorts in the Middle Atlantic States.



   (a) The shape is (i) noticeably skewed to the left (ii) approximately symmetric (iii) noticeably skewed to the right

   (b) Which of these is your best guess for the interquartile range ($IQR = Q3 - Q1$)? (i) 15 (ii) 25 (iii) 35 (iv) 50

   (c) Suppose price is included for a new resort that only charges \$10 for a lift ticket. How would this affect the mean? (No calculations necessary.) (i) decrease it (ii) no effect (iii) increase it

   (d) Suppose price is included for a new resort that only charges \$10 for a lift ticket. How would this affect the standard deviation? (No calculations necessary.) (i) decrease it (ii) no effect (iii) increase it

   (e) Tell how we denote the mean _____and standard deviation _____if the values constitute a sample, and how we denote mean _____and standard deviation _____if the values are for all Middle Atlantic ski resorts.

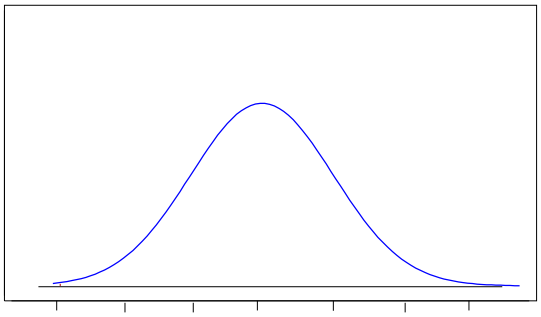
2. (1 pt.) In a sample of resumes, 7 percent of applicants described themselves as being a "team player".

   (a) The unknown proportion of *all* resumes that describe applicants as team players is (i) a statistic denoted p (ii) a statistic denoted $\hat{p}$
   (iii) a parameter denoted p (iv) a parameter denoted $\hat{p}$

   (b) The study also considered what percentage of applicants claimed to have "communication skills". Explain why a single piechart is not enough to display percentages with regards to being a team player and having communication skills.

3. (3 pts.) Adult male hip sizes are normally distributed with mean 37.8 inches and standard deviation 2.6 inches.

   (a) Use the 68-95-99.7 Rule to fill in numbers for the seven indicated points of the horizontal axis on this curve showing the distribution of hip sizes.



   (b) Almost all hip sizes (99.7%) are between _____and _____.

   (c) The smallest 16% are less than how many inches? _____What percentage are more than 43 inches? _____Find the z score for a hip size of 40 inches. _____A hip size of 40 inches could be considered
   (i) extremely small (ii) somewhat small (iii) somewhat large (iv) extremely large

4. (3 pts.) A used-car buyer compared prices of 3-year-old Mercedes Benz and BMW automobiles. In this back-to-back stemplot, leaves represent thousands of dollars.

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Mercedes        BMW
     86  |2|  777889
     22  |3|  2234
     98  |3|  556677
         |4|
         |4|
      1  |5|  134
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   (a) There are two variables of interest. Tell what they are, what roles they play (explanatory/response), and whether they are quantitative or categorical.

   (b) As far as centers are concerned, which type of cars tend to be more expensive? (i) Mercedes (ii) BMW (iii) both about the same. Which type of cars has more uniform prices (least amount of spread)? (i) Mercedes (ii) BMW (iii) both about the same. The shapes are (i) both symmetric (ii) Mercedes symmetric and BMW skewed (iii) Mercedes skewed and BMW symmetric (iv) both skewed

   (c) What is the most noticeable difference between the two distributions?
   (i) centers (ii) spreads (iii) shapes (iv) sample sizes