1.8 Graphical Representations and Summary Statistics for One Quantitative Variable

AP Statistics Name: _____ **CA #2**

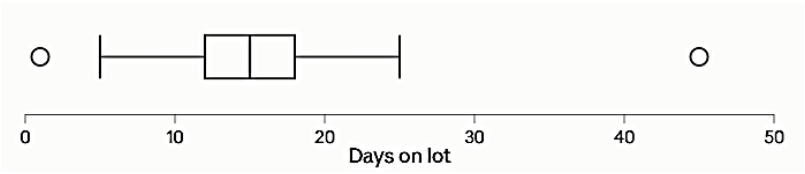
Use the scenario to answer the following questions.

1. A car dealership tracked the number of days each of 24 vehicles sat on the lot before being sold. The modified boxplot shows the results.

Five Number Summary

Minimum	1
Q1	12
Median	15
Q3	18
Maximum	45

Modified Boxplot



a. Use the 1.5×IQR rule to confirm 1 and 45 are both outliers.

b. What percent of vehicles sold in 18 days or fewer?

c. A vehicle's days-on-lot fell at the 25th percentile. How many days was that?

d. Interpret the Inter Quartile Range in this context.

e. Based on the shape of your boxplot, would you expect the mean number of days to be greater than, less than, or about equal to the median? Explain your reasoning.

f. Approximately how many of the 24 vehicles took more than 18 days to sell?

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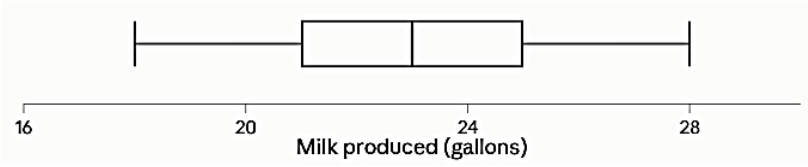
2. A dairy farm recorded the amount of milk, in gallons, produced by each of 20 cows during a morning milking. The modified boxplot shows the results.



Min	18
Q1	21
Median	23
Q3	25
Max	28

Describe the distribution of milk production.

Answers to 1.8 Corrective Assignment

1.

a. Lower Fence: $12 - 1.5(6) = 3$
Upper Fence: $18 + 1.5(6) = 27$
$1 < 3$ and $45 > 27$ so both are outliers

b. Q3 = 18 so approximately 75% of vehicles sold in 18 days or fewer

c. Q1 marks the 25th percentile, 12 days

d. IQR $18 - 12 = 6$ days meaning the middle 50% of vehicles sold between 12 and 18 days.

e. The mean should be about the same as the median. Approximately symmetric with two opposing outliers that roughly offset each other.

f. Approximately 25% of 24 so about 6 vehicles took more than 18 days to sell.

2.

The distribution of morning milk production is approximately symmetric with no outliers. The median is 23 gallons and IQR is $25 - 21 = 4$ gallons. The middle 50% of morning milk production falls between 21 and 25 gallons.

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