Cluster 6.13: Measurement and Data

6.13A: Statistics and Data: Customer Call Wait Times

Focusing TEKS

6.13A Measurement and Data. The student applies mathematical process standards to use numerical or graphical representations to solve problems. The student is expected to interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots. **Readiness Standard**

Additional TEKS:

6.4B Apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving rates and ratios. **Readiness Standard**

6.5B Solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models. **Readiness Standard**

6.12B Use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution. **Supporting Standard**

6.12D Summarize categorical data with numerical and graphical summaries, including the mode, the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution. **Readiness Standard**

Focusing Mathematical Process

6.1A Apply mathematics to problems arising in everyday life, society, and the workplace.

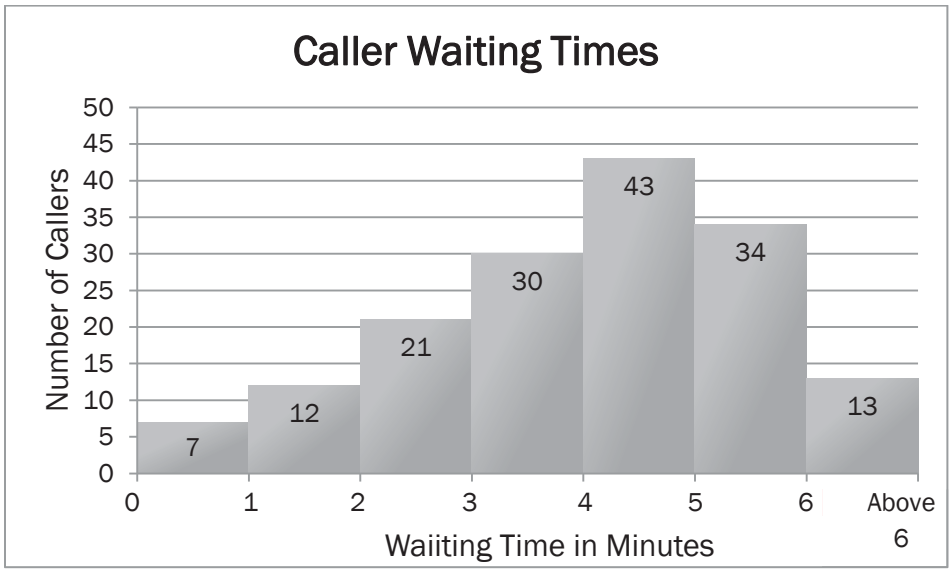
6.1B Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.

6.1F Analyze mathematical relationships to connect and communicate mathematical ideas.

Name _____ Date _____

Performance Task: 6.13A
Statistics and Data: Customer Call Wait Times

The Apex Corporation customer service department recently examined the wait time of callers to their customer support center over the course of an hour. The data is shown in the histogram below.



In order to improve overall customer experience when using the customer support phone lines, the company examined the data.

- What percent of customers in the data set waited on hold for a representative 3 or more minutes?
- What is the ratio of callers on hold less than 3 minutes compared to callers on hold 3 or more minutes?
- What is the mode wait time?
- What is the shape of the distribution and what does this indicate about the mean and median?
- Is the mean or median better for describing the average customer wait time?

Justify your reasoning.

Procedural	0	1	2
Conceptual	0	1	2
Communication	0	1	2

Total points:_____

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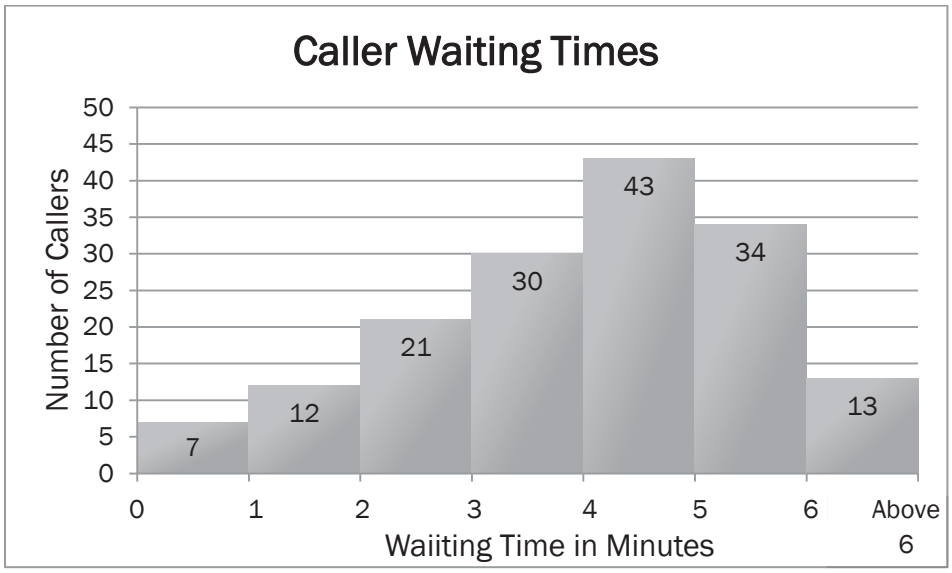

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Performance Task: 6.13A

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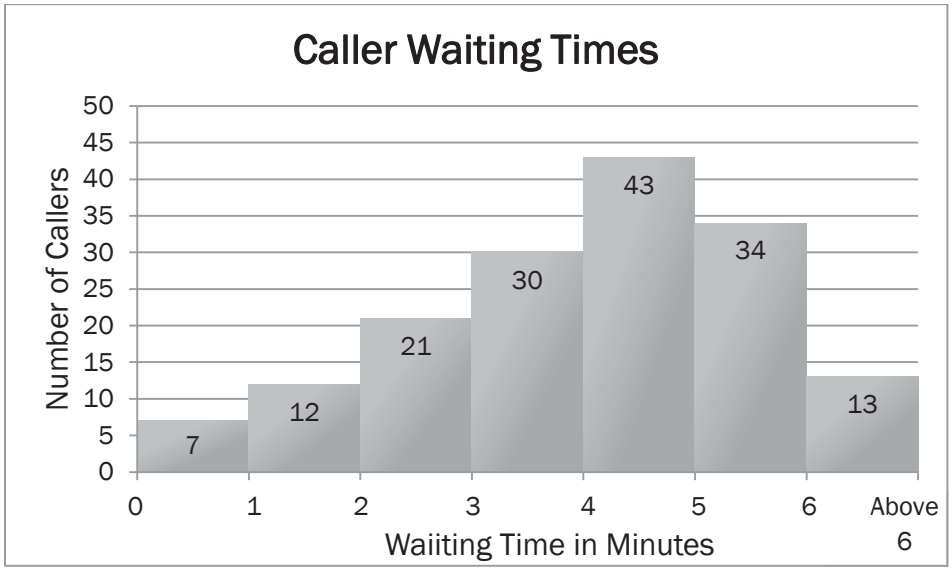

In order to improve overall customer experience when using the customer support phone lines, the company examined the data.

- What percent of the callers does each time interval represent?
- What percent of customers in the data set waited on hold for a representative 3 or more minutes?
- What is the ratio of callers on hold less than 3 minutes compared to callers on hold 3 or more minutes?
- To reduce the wait times so that 50% of customers wait less that 3 minutes, what number of customers needs to move from the higher waiting times?
- How do the mean and median wait times compare and how does this relate to the shape of the distribution?
- Is the mean or median better for describing the average customer wait time?
- What is the mode wait time?

Justify your reasoning.

Procedural	0	1	2
Conceptual	0	1	2
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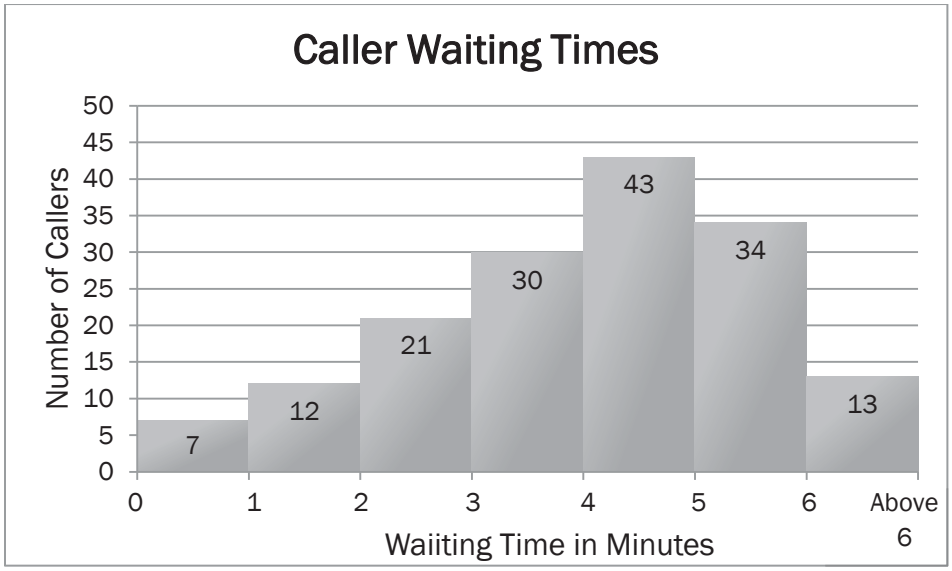

In order to improve overall customer experience when using the customer support phone lines, the company examined the data.

1. How many customers are in the data set?

2. How many customers waited on hold for 3 or more minutes?

3. What percent of customers in the data set waited on hold for a representative 3 or more minutes?

4. How many callers were on hold less than 3 minutes?

Name _____ Date _____

5. What is the ratio of callers on hold less than 3 minutes compared to callers on hold 3 or more minutes?

6. What is the mode wait time?

7. What is the shape of the distribution?

8. What does the shape and skewness of the distribution indicate about the mean value compared to the median value?

9. Is the mean or median better for describing the average customer wait time?