

Histograms

Histograms and bar graphs are visual ways to represent data. Both consist of vertical bars (called bins) with heights that represent the number of data points (called the frequency) in each bin.

Histograms are for displaying distributions of numerical data. In a histogram each bar represents the number of data elements within a certain range of values. All the bars touch each other. Values at the left side of a bin's range are included in that bin. Each range of values should have the same width.

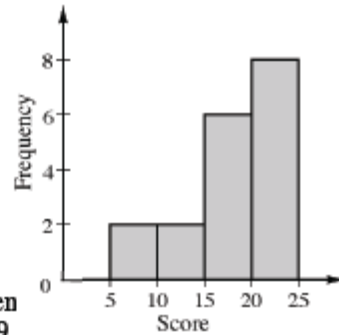
Example 3

The scores for a 25-point quiz are listed below arranged from least to greatest.

7, 7, 12, 13, 15, 16, 16, 16, 18, 19, 20, 20, 20, 21, 21, 22, 23, 24

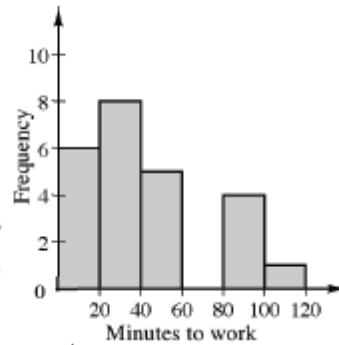
Using intervals of five points, create a histogram for the class.

See histogram at right. Scores on the right end of the interval are included in the next interval. The interval between 10 and 15 only includes the two scores of 12 and 13. The interval between 15 and 20 only includes the six scores of 15, 16, 16, 16, 18, and 19.



Problems

5. Mr. Diaz surveyed his employees about the time it takes them to get to work. The results are shown in the histogram at right.
- How many employees completed the survey?
 - How many employees get to work in less than 20 minutes?
 - How many employees get to work in less than 40 minutes?
 - How many employees take 60 minutes to get to work?



5. a. 24 b. 6 c. 14 d. 0

9. Three coins were tossed 20 times and the number of results that were "heads" each time is shown below:

1, 1, 2, 0, 2, 3, 1, 2, 1, 2, 2, 1, 3, 2, 0, 1, 2, 0, 2, 1

Make a histogram to show the results.

9.

