M6b

A fisheries researcher compiled the following data on lengths of six-year-old white female crappies (in millimeters).

217	230	220	221	225	223
219	217	225	228	234	222
231	222	220	222	222	223
225	214	221	233	227	234
223	225	253	220	213	224
235	283	210	218	235	231

(1) The data range from 210 to 283 mm. Group them into 5 classes of width 15 mm starting with $210 \leq \text{length} < 225$ as the leftmost class. Draw a well-labeled frequency histogram of the grouped data.

(2) Describe the distribution: Is it roughly symmetric or clearly skewed? Are there gaps or outliers?

(3) Find the five-number summary of this distribution. What range of lengths contains the middle 50% of the distribution?

(4) From the shape of the distribution, do you expect the mean to be larger than the median, smaller than the median, or about the same as the median? Find the mean and verify your expectation.

(5) Find the standard deviation. Based on the shape of the distribution, are $\bar{x}$ and s acceptable summary measures of center and spread?