AFM **2.3 Histograms and Percentile Ranks** Chapter 2

**Histogram:** A diagram consisting of rectangles whose area is proportional to the frequency of a variable and whose width is equal to the class interval.

**Example 1:** Use the following data to find the following.

{74, 94, 62, 94, 26, 98, 86, 20, 94, 94, 84, 94, 94, 80, 98, 90, 94, 98, 74, 98, 98, 108, 90, 30, 100, 98, 10}

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| **How to Graph Histograms in the Calculator:** |
| Step 1: 2nd 🡪 1 🡪 On 🡪 Type (bar)Step 2: 2nd 🡪 Window**x-min**:**x-max**: **x-scl** (aka bin)**:****y-min:** 1 (always)**y-max:****y-scl:** 1 (*always*)**x-res:** 1 (*always*)Step 3: Hit Graph |

1. Mean:
2. Median:
3. Mode:
4. Standard Deviation:
5. Five Number Summary:
6. Range:
7. Bin Width:
8. Are there any outliers?
9. Sketch a histogram for your data.
10. Which bin contains the median?

**Percentile:** A measure that tells us what percent of the total frequency scored at or below that measure.

**Percentile Rank:** The percentage of scores that fall below a given score.

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| **Percentile Rank:** |
| $$\frac{number of scores below x}{total number of scores}$$ |

**Example 2:** If Jason graduated 25th out of a class of 150 students, then 125 students were ranked below Jason. Jason’s percentile rank would be:

**Example 3:** The math test scores were:  50, 65, 70, 72, 72, 78, 80, 82, 84, 84, 85, 86, 88, 88, 90, 94, 96, 98, 98, 99.  Find the percentile rank for a score of 84 on this test.

**Example 4:** The math test scores were:  50, 65, 70, 72, 72, 78, 80, 82, 84, 84, 85, 86, 88, 88, 90, 94, 96, 98, 98, 99.  Find the percentile rank for a score of 86 on this test.