

Math 160

Professor Busken

Measures of Relative Standing

Name: _____

1. (# 27 Practice Test) The systolic blood pressure of 18-year-old women is normally distributed with a mean of 120 mmHg and a standard deviation of 12 mmHg. What percentage of 18-year-old women have a systolic blood pressure between 96 mmHg and 144 mmHg?
- A) 95% B) 99.7% C) 68% D) 99.99%

2. (#28 Practice Test) The heights of the adults in one town have a mean of 66.8 inches and a standard deviation of 3.5 inches. What can you conclude from Chebyshev's theorem about the percentage of adults in the town whose heights are between 59.8 and 73.8 inches?
- A) The percentage is at least 75% B) The percentage is at least 95
C) The percentage is at most 75% D) The percentage is at most 95

3. (#26 Practice Test) Use the range rule of thumb to estimate the standard deviation. Round results to the nearest tenth. 26) The heights in feet of people who work in an office are as follows.

6.0 5.5 5.9 5.4 5.8 5.6 5.7 6.2 5.6 5.6

- A) 0.5 B) 0.1 C) 1.2 D) 0.2

4. Environmental scientists measured the greenhouse gas emissions of a sample of cars. The amounts listed below are in tons (per year), expressed as CO₂ equivalents. Is the value of 9.3 tons unusual?

7.2 7.1 7.4 7.9 6.5 7.2 8.2 9.3

5. (#31 Practice Test) Find the z-score corresponding to the given value and use the z-score to determine whether the value is unusual. A test score of 83.0 on a test having a mean of 66 and a standard deviation of 10.
- A) -1.7; not unusual B) 1.7; not unusual
C) 1.7; unusual D) 17; unusual

6. Find the percentile associated with the data value: 53, if the data set is:

53 45 39 69 66 72 44.

7. Consider again the sample data (below) measuring space shuttle flight duration times (in hours).

0 73 95 165 191 192 221 235 235 244 259 262 331 376 381

- What flight duration time is associated with the 42nd percentile (denoted as P_{42})?
- What flight duration time is associated with the 80th percentile (denoted as P_{80})?
- Construct a box and whisker graph using the given data.
- Construct a modified box and whisker graph using the given data.