

Average and SD Practice: Chapter 4

1. The observed ages of a group of students were:

$\{18, 18, 19, 19, 20, 22, 22, 25, 26, 31\}$.

- (a) How many of the ages were within 0.8 SDs of the average age?
 - (b) How many of the ages were within 1.5 SDs of the average age?
 - (c) Convert the age of 31 years to standard units. (From Chapter 5.)
2. A list of six numbers was 52, 58, 65, 68, 68, and 73.
- (a) Find the average and SD of this list.
 - (b) How many numbers on the list were within 1 SD of the average?
 - (c) How many numbers on the list were within 1.5 SDs of the average?
 - (d) Convert the largest number on the list to standard units. (From Chapter 5.)
3. The weights of group of 100 men ranged from 116 pounds to 280 pounds, with a median weight of 178 pounds and an average weight of 181 pounds.
- Suppose that a man in the group who weighed 280 pounds gained 50 pounds and the other 99 men kept their previous weights.
- What is the new range, the new average, and the new median?
- Compared to before, is the SD now smaller, larger, or the same?
- Compared to before, is the interquartile range smaller, larger, or the same? (From Chapter 5.)

Answers

1. (a) Six of them (the two 19's, the 20, the two 22's, and the 25)
(b) Nine of them (all but the 31)
(c) 2.25
2. (a) The average is 64 and the SD is 7.
(b) Four of them (58, 65, 68, and 68).
(c) Five of them (58, 65, 68, 68, and 73).
(d) $9/7$ or $1 \frac{2}{7}$ or about 1.2857.
3. Range: 214 pounds; average: 181.5 pounds; median: 178 pounds.
The SD has become larger.
The interquartile range is the same as before.