$$Z-\textbf{score}$$

- Review: Consider the random sample of 21 patients that yielded the following data on length of stays, in days.

5	28	1	24	15	13	9
3	1	7	6	2	10	12
4	5	18	6	9	9	13

1. If $\sum x_i = 200$ and $\sum x_i^2 = 2936$, find

    a. $\bar{x}$

    b. s_x^2

    c. s_x

2. If 5 is subtracted from each observation, find

    a. the sample mean of the new set of values.

    b. s^2 of the new set of values.

3. If the sample mean $(\bar{x})$ is subtracted from each observation $(y_i = x_i - \bar{x})$,

    a. what is the sample mean of the new set of observations $(\bar{y})$?

    b. what happens to the variance (s_y^2)?

4. Let $z_i = \dfrac{x_i - \bar{x}}{s_x}$, find

    a. $\bar{z}$

    b. s_z^2

- The *sample z-score* for a measurement x is $z = \dfrac{x - \bar{x}}{s}$.

- The *population z-score* for a measurement x is $z = \dfrac{x - \mu}{\sigma}$.

- **Five number summary**

  1. Minimum - $X_{(1)}$
  2. First Quartile - Q_1
  3. Median - $\tilde{X}$
  4. Third Quartile - Q_3
  5. Maximum - $X_{(n)}$

Homework.

Section 2.7: (pp. 84 - 85) # 2.106, 2.116.
Section 2.8: (pp. 94 - 95) # 2.120, 2.125, 2.126.