68-95-99.7 Rule

Total points, first 44 Super Bowls: \( n = 44, \bar{x} = 45.73, s = 12.96 \)

1. 1-standard-deviation-interval around the mean: \((\bar{x} - s, \bar{x} + s) = (32.77, 58.69)\)
   1a) the 68-95-99.7 rule says that approx. 68% of the data values are in this interval
   1b) actual percentage of the data in this interval (count the number of data values above that are in this 1 standard deviation interval):

   \[
   \text{number of data values in interval} \approx \frac{27}{44} = 61.3\%
   \]

2. 2-standard-deviation-interval around the mean: \((\bar{x} - 2s, \bar{x} + 2s) = (19.81, 71.65)\)
   2a) the 68-95-99.7 rule says that approx. 95% of the data values are in this interval
   2b) actual percentage of the data in this interval (count the number of data values above that are in this 2 standard deviation interval):

   \[
   \text{number of data values in interval} \approx \frac{43}{44} = 97.7\%
   \]

3. 3-standard-deviation-interval around the mean: \((\bar{x} - 3s, \bar{x} + 3s) = (6.85, 84.61)\)
   3a) the 68-95-99.7 rule says that approx. 99.7% of the data values are in this interval
   3b) actual percentage of the data in this interval (count the number of data values above that are in this 3 standard deviation interval):

   \[
   \text{number of data values in interval} \approx \frac{44}{44} = 100\%
   \]