BOX PLOT

TEXT: 2.3, 2.4

LAST NAME	FIRST NAME	DATE

1 (3 points). Suppose we are given a sample with mean $\overline{x} = 17$ and standard deviation $s = 6$.

(a) Compute the z-score for the data value 23.

(b) Find the data value with z-score -2.5.

(c) Assuming the distribution is approximately normal (symmetric and bell-shaped), which of the above data values is less likely?

(a) (b)

2 (4 points). Find the quartiles and the IQR for the sample

$$-14 \quad -12 \quad -12 \quad -12 \quad -8 \quad 2 \quad 5 \quad 5 \quad 6 \quad 9 \quad 10 \quad 11 \quad 15 \quad 20$$

(a) Q_1

(b) Q_2

(c) Q_3

(d) IQR

3 (2 points). Consider the following sample data, sample size $n = 21$:

5 6 13 18 21 25 26 28 30 31 34 35 44 59 61 68 69 72 77 78 90

(a) Find the 33rd percentile of the sample data.

(b) 69 is which percentile of the sample data?

4 (10 points)**.** Consider the following sample data:

22 20 28 29 2 13 23 26 21 30

Sort the data:

Find the following statistics:

(a) first quartile

(b) median

(c) third quartile

(d) IQR

(e) lower fence

(f) upper fence

(g) outliers (if any)

Construct a box-and-whisker plot for the sample: