Key

- I can calculate the 5-number summary for a set of data.
- I can describe the center and spread of a distribution.

1. The following box plot shows the distribution of hot dog prices at Major League Baseball parks.

Hot Dog Prices (in dollars)
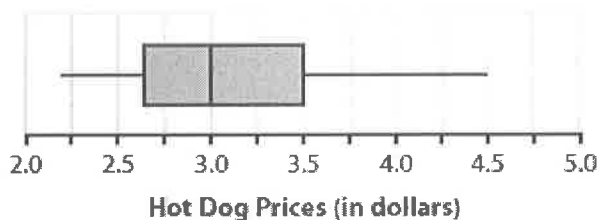
Source: www.teammarketing.com/fci.cfm?page=fci_mlb2004.cfm

a. What is the shape of the distribution?

Skewed right

b. Estimate the five number summary. Explain what each value tells you about the hot dog prices.

Min = $2.20 and means that the cheapest hot dogs are $2.20.

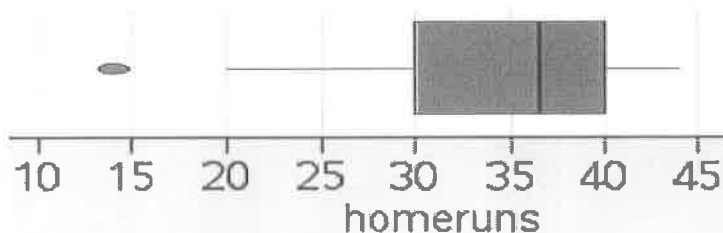Q1 = $2.65 and means that about 25% of hot dogs cost $2.65 or less.

Q2 = $3.00 and means that about 50% of hot dogs cost $3 or less.

Q3 = 3.50 and means that about 75% of hot dogs cost $3.50 or less.

Max = 4.50 and means that the most expensive hot dogs cost $4.50.

2. The following Box Plot represents the data for the number of homeruns that Mr. Pinto's favorite baseball players hit last year.

homeruns

Answer the following:

a. Describe the distribution.

Shape: Skewed left
Outliers: 14

Center: Median = 36
Spread: IQR = 40-30 = 10

b. What percent of the players hit at least 31 homeruns?

75%

c. Why is the left whisker longer than the right whisker?

The data point of 20 is further from Q1 than the maximum value is from Q3.

3. Use the box plots below.

Maria's Grades
8, 9, 6, 7, 9, 8, 8, 6, 9, 9,
8, 7, 8, 7, 9, 9, 7, 7, 8, 9

Tran's Grades
9, 8, 6, 9, 7, 9, 8, 4, 8, 5,
9, 9, 9, 6, 4, 6, 5, 8, 8, 8

Gia's Grades
8, 9, 9, 9, 6, 9, 8, 6, 8, 6,
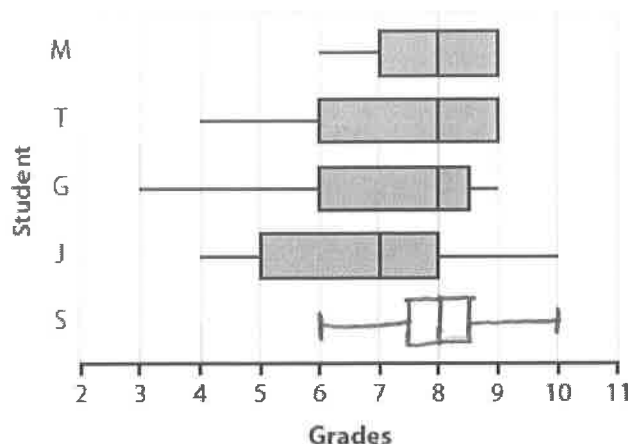8, 8, 8, 6, 6, 6, 3, 8, 8, 9

Jack's Grades
10, 7, 7, 9, 5, 8, 7, 4, 7,
5, 8, 8, 8, 4, 5, 6, 5, 8, 7

Susan's Grades
8, 8, 7, 9, 7, 8, 8, 6, 8, 7,
8, 8, 8, 7, 8, 8, 10, 9, 9, 9

Math Homework Grades

Menu-4-1-1 in calc

a. Make the box plot for Susan's grades next to the letter S above.

b. The plots for Maria and Tran have no whiskers at the upper end because. . .
   Their Q3 is the same value as the maximum.

c. Why is the lower whisker on Gia's box plot so long? *Hint: There are **NOT** more numbers in the lower whisker.*
   Her lowest score might be an outlier (much smaller than the other scores.)

d. The student with the most symmetrical distribution is __Susan__.

   The students whose distributions are skewed to the left are __Tran__,

   and __Gia__.

e. The student with the lowest median grade is __Jack__.

f. The students with the biggest IQR are __Jack__ and __Tran__, and the

   student with the smallest IQR is __Susan__.

g. Does the student with the smallest IQR also have the smallest range? __Nope__

h. What student(s) has/have the largest range? __Gia + Jack__

i. Based on the box plots, __Susan__ has the best grades because __about 75% of__
   her grades are above a 7.5.
   - Her data is more to the right!