NAME: _____   PERIOD: ___

DATE: _____   MATH ANALYSIS 2

                             MR. MELLINA
                             MS. LOMBARDI

17.2 COMPARING DISTRIBUTIONS

Exercise 1: Summary for Your Assigned City
Discuss the answers for your HW-Quiz with your table. After your table has come to a consensus, record your summary below.

Assigned City: _____

Mean: _____   Median: _____   Q1: _____   Q3: _____   IQR: _____

Upper Extreme: _____   Lower Extreme: _____   Range: _____   Outliers: _____

Exercise 2: Box-and-Whisker Plot
Use the space below to draw a modified box-and-whisker plot for your distribution of temperatures. Decide with your group on an appropriate scale.

Exercise 3: Stem-and-Leaf Plot
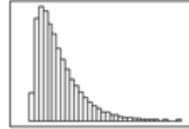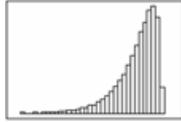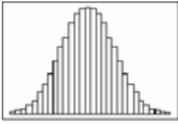*Use the space below to draw a stem-and-leaf plot for your distribution of temperatures.*

Stem | Leaf

Key:

One way to make this comparison is with the back-to-back stem-and-leaf plot. When comparing sets of data, be sure to check the S.O.C.S.

S._____: *Look for skew or symmetry.*

O._____: *State if there are outliers and what they are.*
C._____: *Compare medians.*
S._____: *Compare interquartile ranges.*

Exercise 4: Comparing Distributions

The girls and boys basketball teams at a local high school had their heights measured at practice. The following data was recorded for their heights in centimeters. Compare the following distributions.

Girls		Boys
5	14	
7, 5, 5, 5, 4	15	3, 8, 9
8, 4, 2, 1, 0	16	2, 5, 7, 7, 7, 8, 8, 9
9, 8, 7, 6, 6, 4, 2, 1, 1, 0, 0	17	0, 2, 3, 6, 6, 7, 7
	18	0, 1, 4, 5

5|14|5 = 145 cm

Girls

```
x̄:165.909091      minX:145
Σx:3650           Q1:157
Σx²:607498        Med:169
Sx:9.58624556     Q3:174
σx:9.36584264     maxX:179
n:22
```

Boys

```
x̄:170.636364      minX:153
Σx:3754           Q1:167
Σx²:642064        Med:169.5
Sx:8.43770142     Q3:177
σx:8.24370534     maxX:185
n:22
```

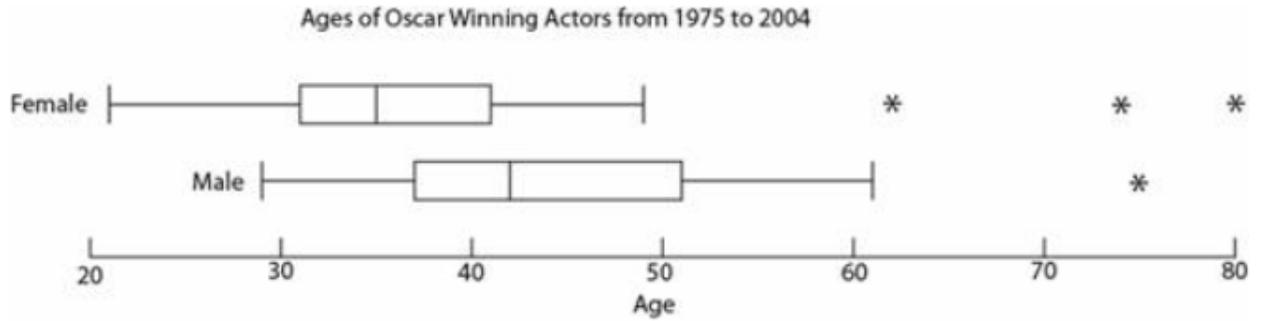**Exercise 5: Speed Dating – Comparing Stem-and-Leaf Plots**
Copy and paste your City's stem-and-leaf plot from (Example 3) under your city name below. Find a classmate who was assigned a <u>different</u> city than you. Insert a picture of your partner's stem-and-leaf plot below next to yours! Compare the two distributions using SOCS.

Your City Name: _____

Your Partner's City Name: _____

Exercise 6: Comparing Distributions

The ages of Oscar Winning Actors from 1975 to 2004 are depicted in the box-and-whisker plot below. Compare the following distributions. Approximate any values when necessary.

Ages of Oscar Winning Actors from 1975 to 2004

Exercise 7: Speed Dating – Comparing Box-and-Whisker Plots

Copy and paste your City's box-and-whisker plot from (Example 2) under your city name below. Find a different classmate who was assigned a <u>different</u> city than you. Insert a picture of your partner's box-and-whisker plot below next to yours! Compare the two distributions using SOCS.

Your City Name: _____

Your Partner's City Name: _____

Exercise 8: Discussion

Take the words below and identify if these are measures of center or measures of spread. Put them under the appropriate column.

Mean   Median   Mode   Q1   Q3   IQR   Range

Measures of Center	Measures of Spread	Neither

a.   Which measures of spread are in relation to the median?

b.   Which measures of spread are in relation to the mean?

c.   Is it possible for a distribution to have the same mean and range but a different spread? If so, can you draw two distributions that do?

d.   Are there any apparent shortcomings with the measures we have so far?

Exercise 9: Speed Dating – Comparing Box-and-Whisker Plots
Copy and paste your City's box-and-whisker plot or your Stem-and-Leaf plot from (Example 2 & 3) under your city name below. Find a different classmate who was assigned a different city than you. Insert a picture of your partner's plot below next to yours! Compare the two distributions using SOCS.

Your City Name: _____

Your Partner's City Name: _____