## Comparing Distributions

| 1. Create a double stemplot using the two stemplots given: |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| er |  |  | Class A |  | Class B |  |
|  | $C 1055 B$ |  | Stem | Leaves | Stem | Leaves |
| Class A |  |  | 4 | 9 | 4 | Leav |
|  |  |  | 5 | 5,7 | 5 | 2, 7 |
|  |  |  | 6 | 6, 6, 8 | 6 | 2, 5, 8, 8 |
|  | 4 |  | 7 | 2, 8, 8, 8 | 7 | 2, 5 |
|  |  |  | 8 | 4, 5, 7, 8, 8 | 8 | 1, 4, 5, 7, 7 |
| 5 | 5 |  | 9 | 1, 5, 5 | 9 | $0,1,1,5,5,5$ |
|  |  |  | 10 | 0, 0 | 10 | 0 |
| $866$ | 6 | 2588 | 2 20 Notice the numbers on the left are smallest near the |  |  |  |
| 8882 | 7 | 25 stem. The increase going out. Also, notice how the |  |  |  |  |
|  |  | 14577 | eaves" have numbers that are spaced out |  |  |  |
| 55 |  | $011555$ |  |  |  |  |
| 551 |  |  |  | 06 |  |  |
| 00 | 10 | O where | re |  |  |  |

2. The following boxplots summarizes weights of the male and female students in a class:

Circle all of the following which are NOT correct.
(a) About $50 \%$ of the male students have weights between 150 and 185 pounds.
(b) About $25 \%$ of female students have weights
 more than 130 pounds.
(c) The median weight of male students is about 162 pounds.
(d) The mean weight of female students is about 120 pounds because of symmetry.
(e) The male students have less variability than the female students.

> Choice (a) is correct because Q1 and Q3 are about 150 and 185 . There is $25 \%$ in each part of the box.
> Choice (b) is correct. 130 is the 3 rd quartile. Therefore, $25 \%$ of the data is above that.
> Choice (c) is correct. The line in the middle of the box is the median. It is close to 162 .
> Choice (d) is correct. We know that the mean is about equal to the median when the distribution is symmetric.
> Choice (e) is incorrect. The boxplot for males is longer than the box plot for females. Therefore, the data is more spread out. It has MORE variability.
3. Barry Bonds and Babe Ruth are two of the most successful hitters in baseball history. The following data represents the number of HRs each hitter hit in their career:

Barry Bonds (1986-2007): 16, 25, 24, 19, 33, 25, 34, 46, 37, 33, 42, 40, 37, 34, 49, 73, 46, 45, 45, 5, 26, 28
Babe Ruth (1915-1935): $\quad 4,3,2,11,29,54,59,35,41,46,25,47,60,54,46,49,46,41,34,22,6$
Because we are asked to make parallel (or double) box plots, we must find the five number summary. Don't be a potato head, use the calculator's 1-Var Stat function!

Bonds 5\# summary: $\{\min =5, Q 1=25, M e d=34, Q 3=45, M a x=73\}$
Ruth's 5\# summary: $\{\min =2, Q 1=16.5, M e d=41, Q 3=48, M a x=60\}$
Box plots on next page...

Bonds Vs Ruth HRs hit each year


The median number of HRs hit is higher for Ruth(41) than it is for Bonds (34). Bond's distribution
is more spread out, however with a greater range, 68 to 58. Bonds appears to have an outlier at 73.
Bond's distribution appears to be symmetric, while Ruth's appears to be skewed to the left.
4. Vertical boxplots are similar to horizontal boxplots. Use the boxplots to determine if the statements are true or false.


Home Sale Prices in Three Cities in 2012

4. Multiply. $(3-2 x)^{2}$
5. Solve the following equation for y : $\quad 1.2<x-y=12$


