Ch 1.6
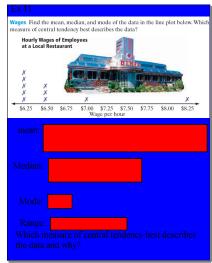***Measures of Central Tendency -*** are numbers used to represent the middle of the data.

1. ***Mean***- (average) the sum of the numbers dividing by how many in the set of data.

2. ***Median*** - is the number in the middle when the data is placed in numerical order or average of the 2 middles.

3. ***Mode*** - the number(s) that appear the most often in the data set.

4. ***Range*** - the highest score - lowest score

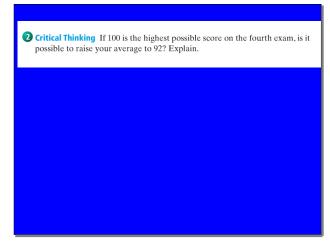***Outlier***- is a value that is much larger or smaller than all the other scores in the data set. It will ***skew*** the mean.

Feb 9-1:21 PM

Ex 1)

Wages Find the mean, median, and mode of the data in the line plot below. Which measure of central tendency best describes the data?

Hourly Wages of Employees at a Local Restaurant

$6.25 $6.50 $6.75 $7.00 $7.25 $7.50 $7.75 $8.00 $8.25
Wage per hour

mean:

Median:

Mode:

Range:

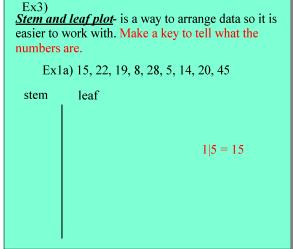Which measure of central tendency best describes the data and why?

Aug 27-3:15 PM

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2 EXAMPLE   Solving an Equation

Suppose your grades on three history exams are 80, 93, and 91. What grade do you need on your next exam to have a 90 average on the four exams?

$$\frac{80 + 93 + 91 + x}{4} = 90$$ Use the formula for mean.
Let x = the grade on the fourth exam.

$$\frac{264 + x}{4} = 90$$ Simplify the numerator.

$$4\left(\frac{264 + x}{4}\right) = 4(90)$$ Multiply each side by 4.

$$264 + x = 360$$ Simplify.

$$264 + x - 264 = 360 - 264$$ Subtract 264 from each side.

$$x = 96$$ Simplify.

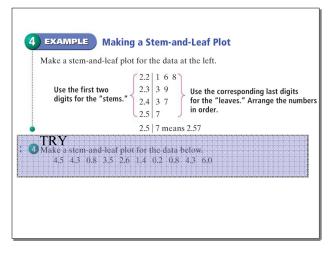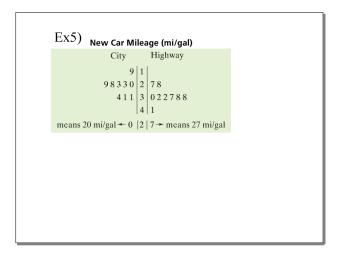● Your grade on the next exam must be 96 for you to have an average of 90.

Aug 27-3:16 PM

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2 Critical Thinking If 100 is the highest possible score on the fourth exam, is it possible to raise your average to 92? Explain.

Aug 27-3:16 PM

Ex3)
Stem and leaf plot- is a way to arrange data so it is easier to work with. Make a key to tell what the numbers are.

Ex1a) 15, 22, 19, 8, 28, 5, 14, 20, 45

stem   leaf

1|5 = 15

Feb 9-1:16 PM

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4 EXAMPLE   Making a Stem-and-Leaf Plot

Make a stem-and-leaf plot for the data at the left.

Use the first two digits for the "stems."

2.2	1 6 8
2.3	3 9
2.4	3 7
2.5	7

Use the corresponding last digits for the "leaves." Arrange the numbers in order.

2.5 | 7 means 2.57

TRY
4 Make a stem-and-leaf plot for the data below.
4.5 4.3 0.8 3.5 2.6 1.4 0.2 0.8 4.3 6.0

Aug 27-3:17 PM

1

Ex5)

New Car Mileage (mi/gal)

City		Highway
9	1	
9 8 3 3 0	2	7 8
4 1 1	3	0 2 2 7 8 8
	4	1

means 20 mi/gal ← 0 | 2 | 7 → means 27 mi/gal

Aug 27-3:18 PM