

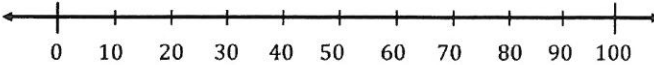
Name: \_\_\_\_\_ Per: \_\_\_\_\_ Date: \_\_\_\_\_  
 Serafino ▪ Algebra 2E

**10R Statistics Unit Review**  
**Quest Review / Classwork**

Situation: I'm at a store and overhear a conversation between two parents about how long it takes their teenagers to get ready in the morning. Now I'm curious: I want to know how many minutes it takes the average NJ high school student to get ready for school in the morning.

1. Define my population. What kinds of population/sample concerns/biases should I be aware of before I attempt to collect my data?
  
2. I decide limit my population to RHS students, and decide to give the students a survey (because observation, experiment and simulation are all super impractical and super weird). Come up with an example of each type of sampling method for me to collect my data:
  - a. Voluntary response:
  - b. Systematic:
  - c. Stratified:
  - d. Cluster:
  - e. Convenience:
  
3. A fair and unbiased method of sampling is established. Twenty random students are asked to time themselves on a normal-scheduled Wednesday from, “When they step out to bed to when they leave the house”. Here are the responses: 23 25 26 27 32 35 35 35 35 38 46 48 49 52 53 54 64 73 74 96
  - a.
 

Mean =	Median =	Mode =	Range =	
5-Number-Summary =	IQR =	St. Dev =		
  - b. Find the limits for and identify any outliers: Limits =    Outliers =
  - c. Make a box-and-whisker of the original data using the number line. Then make a modified boxplot below the number line, if applicable.



- d. What percent of students take between 30 and 60 minutes to get ready in the morning?

What is the margin of error?

What does that mean about the population as a whole?

4. I decide to decide to give more surveys and have my teachers collect even more data. Now I've collected 500 pieces of data that are distributed normally with a mean of 48 and the standard deviation is 14.

- a. Draw the normal distribution, labeling 3 standard deviations to the left and right.



- b. What percent of students take...

34 minutes or less to get ready?

76 minutes or more to get ready?

1 hour or less to get ready?

Between 30 and 60 minutes to get ready?

- c. What is the z-score of someone who takes 15 minutes to get ready? What percentile is that person in?

Someone with a z-score of +2.86 takes how long to get ready? What percentile is that person in?

5. Who eats breakfast? 595 students in an urban school were surveyed about who eats breakfast:

	Male	Female	Total
Eat Breakfast Regularly	190	110	300
Doesn't Eat Breakfast Regularly	130	165	295
Total	320	275	595

If we selected

random from the survey, what is the probability that the student is:

a student at

- Female?
- Female who doesn't eat breakfast regularly?
- Doesn't eat breakfast regularly, given they are female?
- Female, given they don't breakfast regularly?