Memory Test

Let's put it all together.

20.1 Collecting a Sample

Your teacher will give you a paper that lists a data set with 100 numbers in it. Explain whether each method of obtaining a sample of size 20 would produce a random sample.

Method 1: A spinner has 10 equal sections on it. Spin once to get the row number and again to get the column number for each member of your sample. Repeat this 20 times.

Method 2: Since the data looks random already, use the first two rows.

Method 3: Cut up the data and put them into a bag. Shake the bag to mix up the papers, and take out 20 values.

Method 4: Close your eyes and point to one of the numbers to use as your first value in your sample. Then, keep moving one square from where your finger is to get a path of 20 values for your sample.

20.2 Sample Probabilities

Continue working with the data set your teacher gave you in the previous activity. The data marked with a star all came from students at Springfield Middle School.

1. When you select the first value for your random sample, what is the probability that it will be a value that came from a student at Springfield Middle School?

2. What proportion of your entire sample would you expect to be from Springfield Middle School?

3. If you take a random sample of size 10, how many scores would you expect to be from Springfield Middle School?

4. Select a random sample of size 10.

5. Did your random sample have the expected number of scores from Springfield Middle School?

20.3 Estimating a Measure of Center for the Population

1. Decide which measure of center makes the most sense to use based on the distribution of your sample. Discuss your thinking with your partner. If you disagree, work to reach an agreement.

2. Estimate this measure of center for your population based on your sample.

3. Calculate the measure of variability for your sample that goes with the measure of center that you found.

20.4 Comparing Populations

Using only the values you computed in the previous two activities, compare your sample to your partner's.

Is it reasonable to conclude that the measures of center for each of your populations are meaningfully different? Explain or show your reasoning.