

Name: _____ Hour: _____ Date: _____

Lesson 7.1: Day 1: What was the average for the Chapter 6 test?



How did the Chapter 6 test go? Today, we will be taking a **sample** from a **population**. We will use the average from the **sample** to estimate the average for the **population**.

Let's start with a very simple example. My 5th hour is very small. There were only 4 people who took the chapter 6 test. Their scores were: 60 70 80 90.

1. Make a dotplot of the population distribution.
2. Take a sample of any 2 of the scores. Find the mean of your sample.
3. Figure out all of the possible samples of size 2. Calculate a sample mean for each sample of 2.
4. Make a dotplot using each of the means you found in #3.
5. What is the mean of the population? Label this on the dotplot above.

Lesson 7.1 Day 1– What is a Sampling Distribution?

Important ideas:

Check Your Understanding

To determine how much homework time students will get in class, Mrs. Lin has a student select an SRS of 20 chips from a large bag. The number of red chips in the SRS determines the number of minutes in class students get to work on homework. Mrs. Lin claims that there are 200 chips in the bag and that 100 of them are red. When Jenna selected a random sample of 20 chips from the bag (without looking), she got 7 red chips. Does this provide convincing evidence that less than half of the chips in the bag are red?

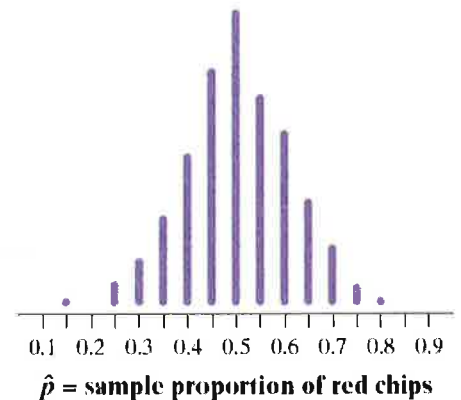
1. Identify the population, parameter, sample and statistic.

Population: _____ Parameter: _____

Sample: _____ Statistic: _____

2. What is the evidence that less than half of the chips in the bag are red?
3. Provide two explanations for the evidence described in part (a).

We used technology to simulate choosing 500 SRSs of size $n = 20$ from a population of 200 chips, 100 red and 100 blue. The dotplot shows \hat{p} = the sample proportion of red chips for each of the 500 samples.



4. There is one dot on the graph at 0.80. Explain what this value represents.

5. Would it be surprising to get a sample proportion of $\hat{p} = 7/20 = 0.35$ or smaller in an SRS of size 20 when $p = 0.5$? Justify your answer.

6. Based on your previous answers, is there convincing evidence that less than half of the chips in the large bag are red? Explain your reasoning.