### *Try It Yourself*

Using software that is capable of doing resampling simulations, execute a computer equivalent of the following simulation.

1. Put 200 slips of paper in a box. Mark 72 "1" and 128 "0."
2. Shuffle the box, and draw out a number. Record the number, and put the number back.
3. Repeat step two 199 more times, and record the total number of ones.
4. Repeat steps two and three many times (say, 1000), recording the number of ones each time.
5. Produce a histogram of the results.
6. Without worrying about being too precise, fill in the blanks in this statement.. Most of the time, the proportion who rated the handling of the economy "positively" in the sample lies between ___ and ___.

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***Question:*** *Which step in the above simulation is essential in modeling the size of the original sample?*

**ANSWER**

## Answer:

The original sample size was 200. Step 3 is the essential step in modeling the sample size - it determines the size of the resample being drawn from the box.

Why not Step 1, in which we created the box with 200 slips of paper?

Because it is not the size of the box that models sample size behavior, but the size of the resample that you draw from the box. Recall that we actually could have used a box with 100 slips of paper, or some other number as long as 36% of them were 1's. As long as we resample with replacement, it doesn't matter – the probability of drawing a 1 remains unchanged.

But the size of the resample <u>does</u> matter – the proportion of 1's in a small resample will vary a lot more than in a large resample. If we want to assess variability in our original sample, the resample size must equal the original sample size.