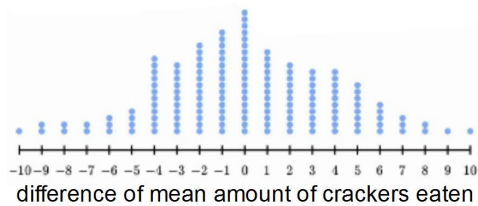


In an experiment aimed at studying the effect of advertising on eating behavior in children, a group of 500 children ranging in age from 7-11 years old were randomly assigned to two different groups. After randomization, each child was asked to watch a cartoon in a private room, containing a large bowl of goldfish crackers. The cartoon included two commercial breaks.

The first group watched food commercials (mostly snacks), while the second group watched non-food commercials (games and entertainment products). Once each child finished watching the cartoon, the conductors of the experiment weighed the bowl of crackers to measure how many grams of crackers each child ate. They found that the mean amount of crackers eaten by the children who watched food commercials was 10 grams greater than the mean amount of crackers eaten by the children who watched non-food commercials.

Using a simulator, they re-randomized the results into two new groups and measured the difference between the means of the new groups. They repeated this simulation 150 times and plotted the resulting differences as given below and on the back of this sheet.

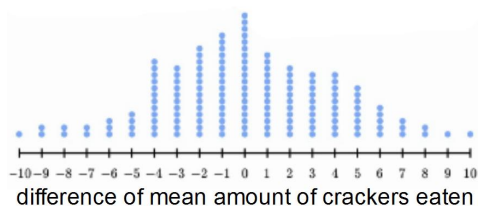


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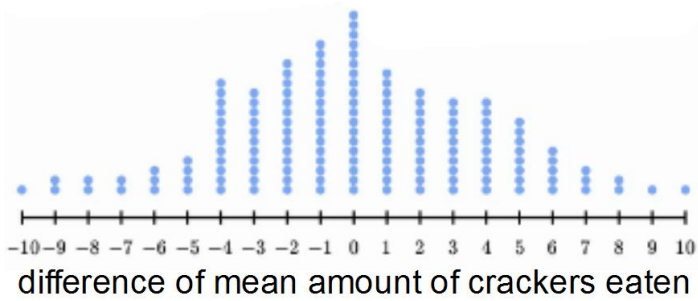
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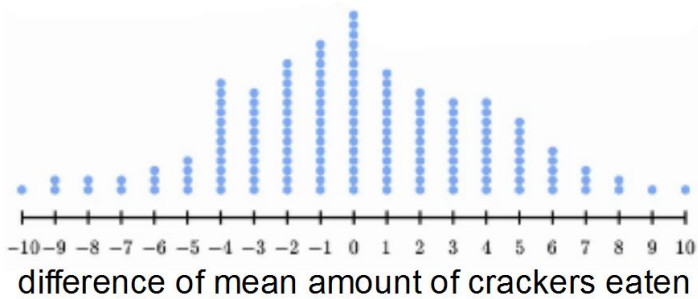
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1. What is the population difference for the mean amount of crackers?
2. If the mean of the randomization distribution is .07 and the standard deviation is 3.8, use the margin of error to find a 95% confidence interval.

3. Was the difference in the two treatments statistically significant?

4. What can you conclude from this experiment?



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