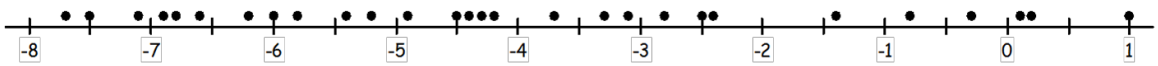
Lesson Summary

- Remember to think about sampling variability—the chance variability from sample to sample.
- Beware of making decisions based just on the fact that two sample means are not equal.
- Consider the distribution of the difference in sample means when making a decision.

Problem Set

Below are three dot plots. Each dot plot represents the differences in sample means for random samples selected from two populations (Bag A and Bag B). For each distribution, the differences were found by subtracting the sample means of Bag B from the sample means of Bag A (sample mean A − sample mean B).

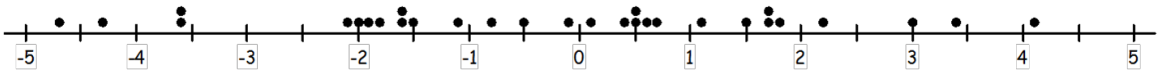
1. Does the graph below indicate that the population mean of Bag A is larger than the population mean of Bag B? Why or why not?



Sample Mean A − Sample Mean B

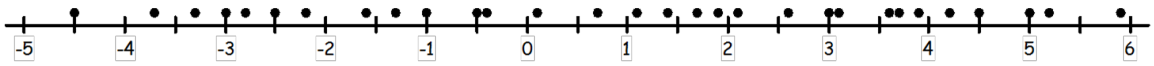
2. Use the graph above to estimate the difference in the population means (Mean A – Mean B).

3. Does the graph below indicate that the population mean of Bag A is larger than the population mean of Bag B? Why or why not?



Sample Mean A − Sample Mean B

4. Does the graph below indicate that the population mean of Bag A is larger than the population mean of Bag B? Why or why not?



Sample Mean A − Sample Mean B

5. In the above graph, how many differences are greater than 0? How many differences are less than 0? What might this tell you?

6. In Problem 4, the population mean for Bag A is really larger than the population mean for Bag B. Why is it possible to still get so many negative differences in the graph?