STANDARD DEVIATION

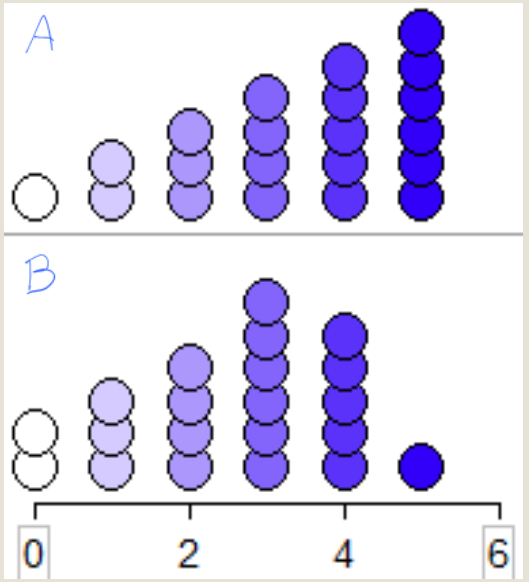
Comparing standard deviations

Top = A

Bottom = B

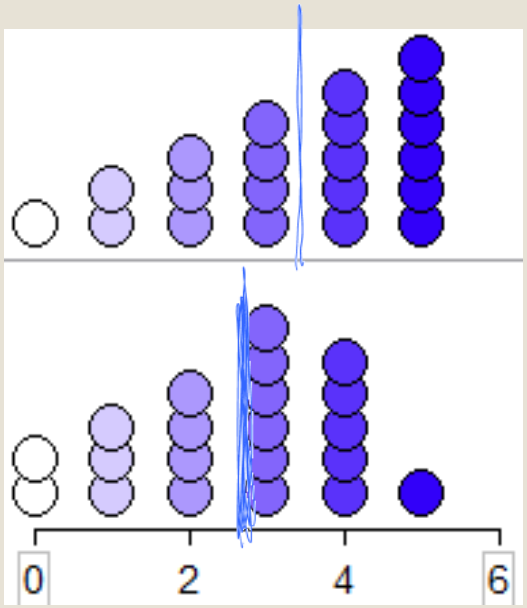
- Look at the pairs of graphs on the handout.
- For each pair, determine which has the larger standard deviation, or if they are the same.

Question 1

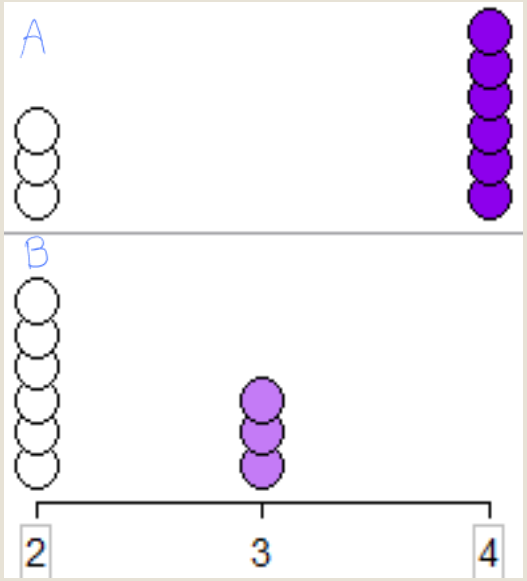


Answer – Question 1

- A is larger
- Distributions that are more bell-shaped typically have a smaller SD than those that are skewed.

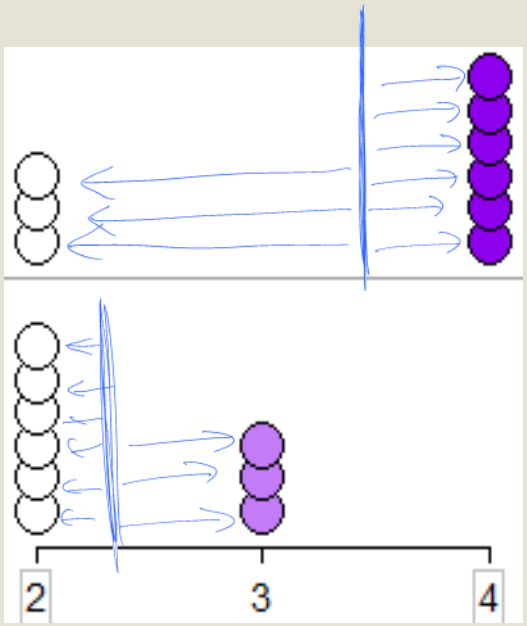


Question 2

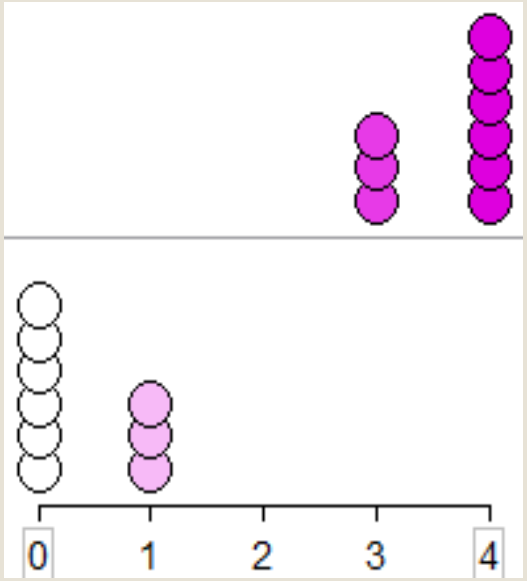


Answer – Question 2

- A is larger
- There are more points farther away from the mean in plot A than in plot B.

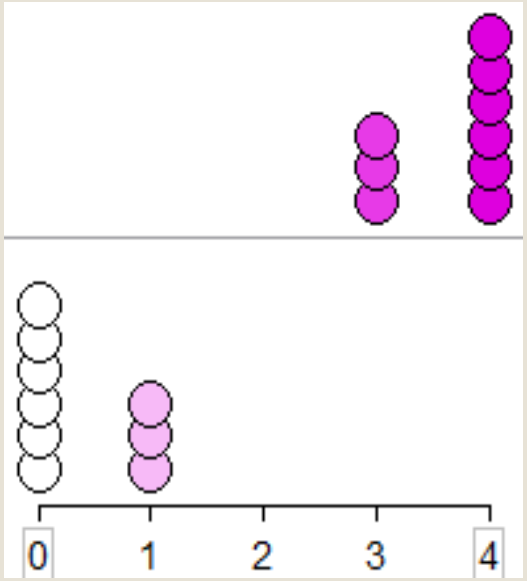


Question 3

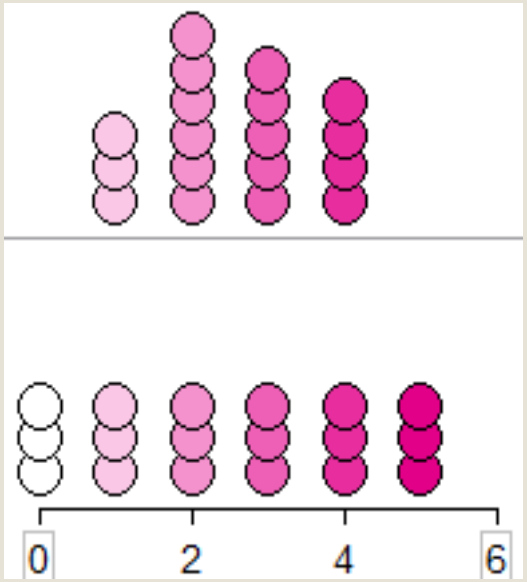


Answer – Question 3

- Same
- The distributions are just a mirror image of each other so the SDs will be the same.

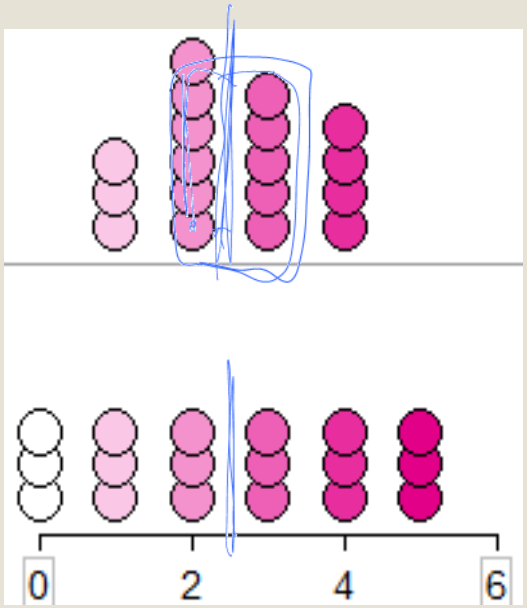


Question 4



Answer – Question 4

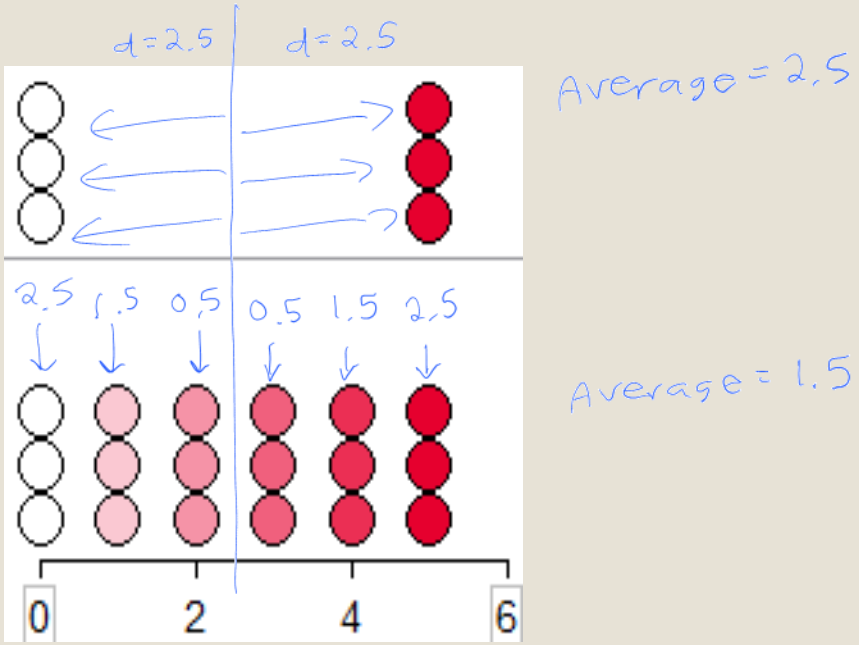
- B is larger
- Distributions with smaller range of values and are bell-shape have a smaller SD than those that have a wider spread of values and uniform shape.



4-1
range = 3

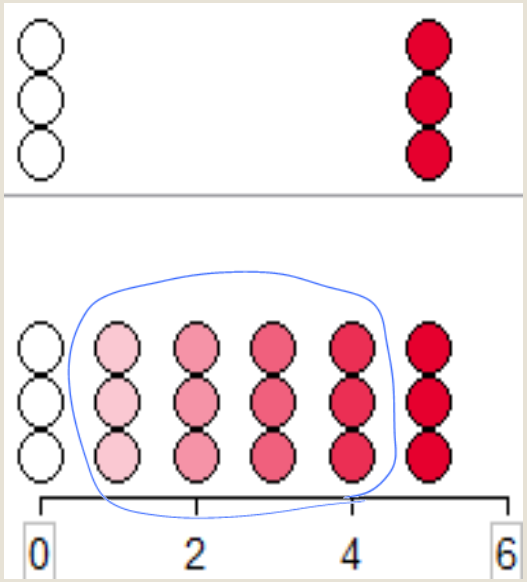
5-0
range = 5

Question 5

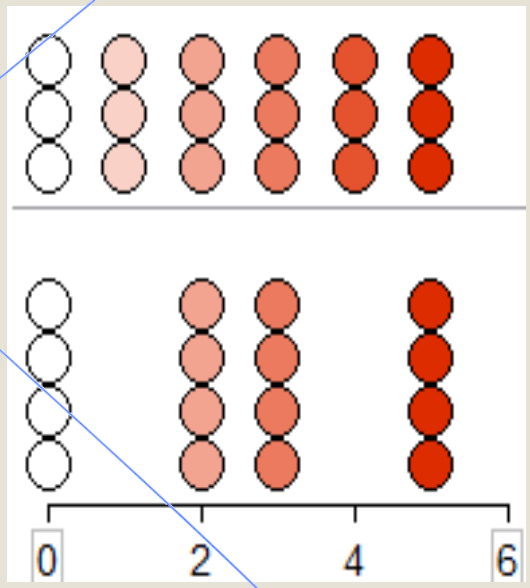


Answer – Question 5

- A is larger
- Large gaps in the distribution often make the SD larger than distributions with no gap (given the same range of values).

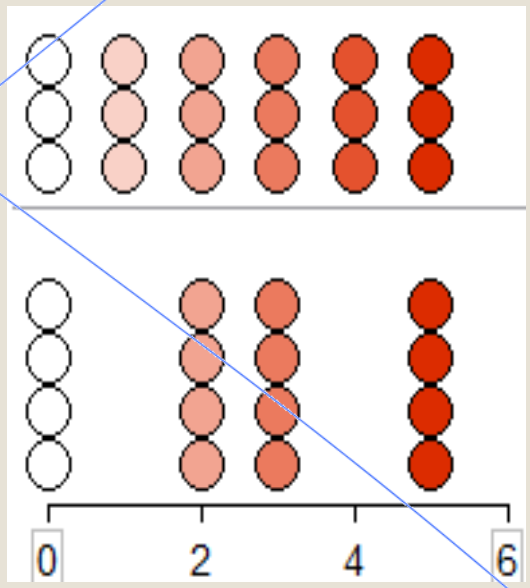


Question 6

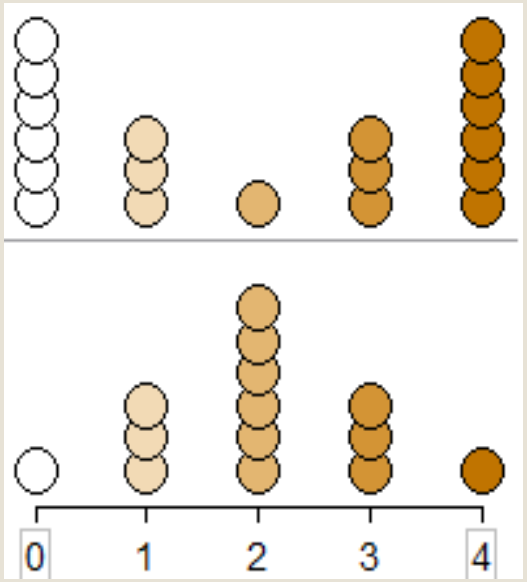


Answer – Question 6

- B is larger
- Gaps in the distribution often make the SD larger than distributions with no gap (given the same range of values).



Question 7



Answer – Question 7

- A is larger
- Distributions that are more bell-shaped typically have a smaller SD than those that are bimodal.