

Basic Statistics Practice Questions

YOU MAY USE A CALCULATOR ON ALL OF THE FOLLOWING QUESTIONS.

{10, 4, -1, -2, 10, 3}

Set A: {5, -2, 11, 13, -5, 9, -8}

1. What are the median, mean, mode, and range of the data set above?

Set B: {5, 4, 6, 5, 4, 4, 6}

3. Which of the following statements is true of the two sets shown above?
- (A) The Standard Deviation of Set A is higher than the Standard Deviation of Set B, and the Range of Set A is greater than the Range of Set B.
- (B) The Standard Deviation of Set B is higher than the Standard Deviation of Set A, and the Range of Set A is greater than the Range of Set B.
- (C) The Standard Deviation of Set B is higher than the Standard Deviation of Set A, and the Range of Set B is greater than the Range of Set A.
- (D) The Standard Deviation of Set A is higher than the Standard Deviation of Set B, and the Range of Set B is greater than the Range of Set A.

Age	Frequency
18	3
19	4
20	7
21	6
22	4
23	4
26	1
31	1

2. The table above shows the distribution of ages of 30 students enrolled in a college physics class. Which of the following gives the correct order of the mean, median, and mode of the ages?
- (A) mode < median < mean
- (B) mode < mean < median
- (C) median < mode < mean
- (D) mean < median < mode

4. A certain data set consists of 16 positive integers. The maximum value of this set is 40 and the minimum value is 17. If another integer is added to create a new data set, and the value of this new integer is 14, which of the following measures must increase by 3 from the original data set to the new data set?

- (A) The range
- (B) The median
- (C) The mean
- (D) The mode

Color	Percent of Respondents
Red	22%
Purple	3%
Orange	6%
Blue	36%
Yellow	13%
Gold	1%
Green	19%

5. A survey was given to a set of people to determine their favorite colors. The results from this survey are given in the table above. In a previous survey, the researchers found that the color with a median percent of popularity was green, with 18% of survey respondents in that survey choosing it as their favorite color. What is the difference between the median percent of popularity in the new survey compared to the median percent of popularity in the previous survey?

- (A) 1%
- (B) 5%
- (C) 12%
- (D) 18%

Number of Plants	Number of Leaves
8	0-10
9	11-20
9	21-30
6	31-40
7	41-50
11	51-60
10	61-70
7	71-80
3	81-90
2	91-100
1	101-110

6. A biologist was researching the number of leaves that grew from a set of 73 plants within the first 30 days after sprouting. The table above shows these results. Based on the table, what was the median number of leaves for the 73 plants?

- (A) 31-40
- (B) 41-50
- (C) 51-60
- (D) 81-90

7. A turtle rancher weighed each of his 25 turtles, and the mean, median, range, and standard deviation for the data were found. The turtle with the highest recorded weight was re-weighed and found to actually weigh 2 pounds more than originally measured. What value remains unchanged if the four values are recalculated using the correct weight?

- (A) Range
- (B) Mean
- (C) Standard Deviation
- (D) Median

8. The tables below give the distribution of people in attendance for two events, a concert and a play, over the same 30 days in April.

Concert:

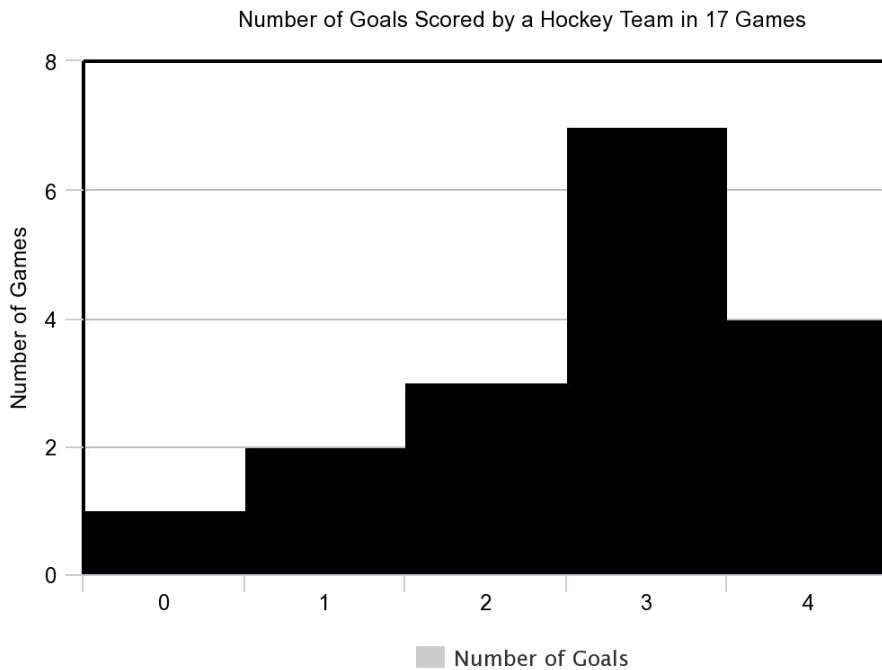
Attendance	Frequency
0	5
10	4
20	6
30	3
40	5
50	7

Play:

Attendance	Frequency
0	1
10	3
20	7
30	12
40	5
50	2

Which of the following is true about the attendance data for the two events?

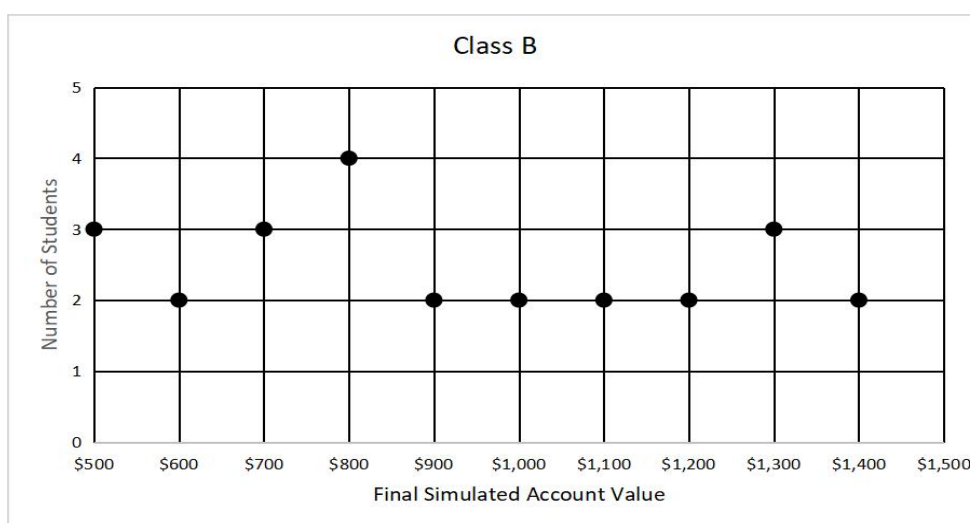
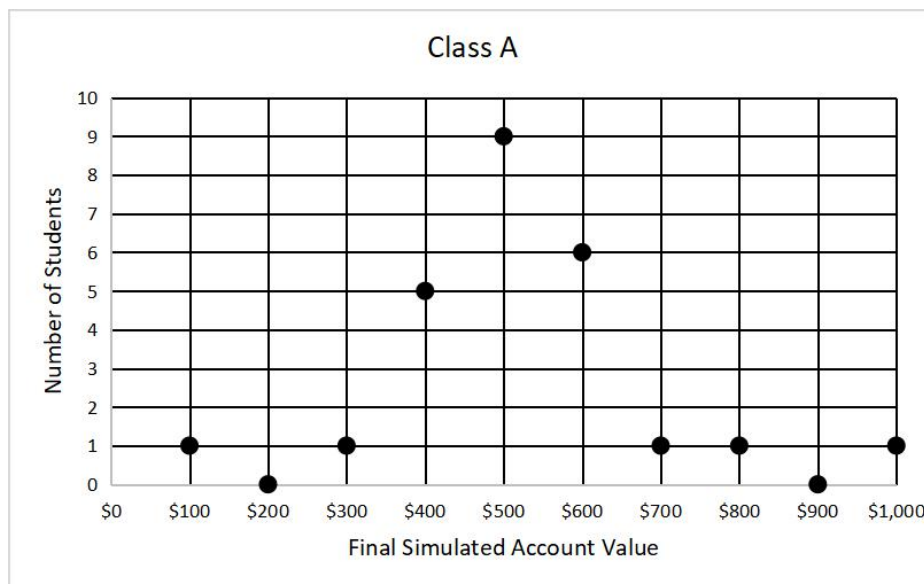
- (A) The standard deviation of attendance for the concert is the same as for the play.
- (B) The standard deviation of attendance for the play is larger.
- (C) The standard deviation of attendance for the concert is larger.
- (D) The standard deviation of attendance for these two events cannot be calculated from the data provided.



9. FREE RESPONSE: Based on the graph above, in how many games played did the hockey team score goals equal to the median number of goals for the 17 games?

550	560	575	580	600	610	635	655
655	655	675	680	695	700	705	705
710	715	725	725	730	740	755	805

10. The table above lists the masses, to the nearest milligram, of a random collection of 24 guitar picks at a music store. If the mass of the heaviest pick is considered an outlier and removed from the data, which will change the most?
- (A) Mean
 (B) Median
 (C) Range
 (D) Mode



11. Two economics classes of 25 students each both played a mock investment game in which each student was given a simulated amount of money to invest. The final values of the students' simulated accounts for both classes are shown in the two charts above. If S_A and S_B represent the standard deviations and R_A and R_B represent the ranges for Class A and Class B, respectively, which of the following choices correctly expresses the relationship of the two classes' range and standard deviation for their final account values?

- (A) $S_A < S_B$ and $R_A < R_B$
- (B) $S_B < S_A$ and $R_A = R_B$
- (C) $S_A < S_B$ and $R_A = R_B$
- (D) $S_A = S_B$ and $R_A = R_B$

12. A researcher chose 450 people at random from each of two cities and asked each person how many vehicles he or she owns. The results are shown in the table below.

Number of Vehicles	City A	City B
0	100	50
1	75	50
2	50	100
3	150	125
4	75	125

What is the median number of vehicles owned for all the people surveyed?

- (A) 0
- (B) 1
- (C) 2
- (D) 3