Standard Deviation DS Questions

1. **What is the product of three consecutive integers?**

   (1) At least one of the integers is positive.
   (2) The sum of the integers is less than 6. Clearly insufficient, consider {-1, 0, 1} and {-3, -2, -1}.

2. Let S be a finite set of consecutive multiples of 7. How many terms are there in S?

   (1) The sum of the terms in set S is 105.
   (2) The standard deviation of set S is equal to 3.5

3. The median height of the 5 children in family A is 118 cm. How many children in family A are taller than 128cm?

   (1) The average height of the children in family A is 120cm.

   (2) The second highest child in family A is 130cm.

4. 4, 6, 8, 10, 12, 14, 16, 18, 20, 22

   List M (not shown) consists of 8 different integers, each of which is in the list shown. What is the standard deviation of the numbers in list M ?

   (1) The average (arithmetic mean) of the numbers in list M is equal to the average of the numbers in the list shown.
   (2) List M does not contain 22.

5. What is SD of given set of numbers whose average is 5?

   (1) None of the numbers are greater than this Average
   (2) The Standard deviation is 5 when value of each of the given number is increased by 7

6. List S and List T each contain 5 positive integers, and for each list the average (arithmetic mean) of the integers in the list is 40. If the integers 30,40,50 are in both lists, is the standard deviation of the integers in list S greater than the standard deviation of the integers in list T?

   (1) The integer 25 is in list S
   (2) The integer 45 is in list T

7. There is a set of consecutive even integers. What is the standard deviation of the set?

   (1) There are 39 elements in the set.
   (2) the mean of the set is 382.

8. Is the standard deviation of the salaries of Company Y's employees greater than the standard deviation of the salaries of Company Z's employees?

   (1) The average (arithmetic mean) salary of Company Y's employees is greater than the average salary of Company Z's employees.

   (2) The median salary of Company Y's employees is greater than the median salary of Company Z's employees.

9. If x is an integer, how many even numbers does set (0, x, x^2, x^3,.... x^9) contain?

   (1) The mean of the set is even
   (2) The standard deviation of the set is 0

10. Each term of set T is a multiple of 5. Is standard deviation of T positive?

    (1) Each term of set T is positive
    (2) Set T consists of one term

11. Set A consists of five different numbers; set B consists of four different numbers, each of which is in set A. Is the standard deviation of set A less than the standard deviation of set B ?

    (1) Set A contains five consecutive integers.

    (2) The average (arithmetic mean) of set A is equal to the average (arithmetic mean) of set B.

12. If Q is a set of consecutive integers, what is the standard deviation of Q?

    (1) Set Q contains 21 terms.
    (2) The median of set Q is 20.

13. A set of data consists of 4 integers. What is the standard deviation of this data set?

    (1) The arithmetic mean and the median are both 2
    (2) The mode is 2, and the range is also 2

14. In the last two years, each of Jeremy□s six children grew in height by at least one inch. If the standard deviation of their heights two years ago was 4.5 inches, what is the standard deviation of their heights?

    (1) In the last two years, the heights of Jeremy□s six children have increased a total of 17 inches.
    (2) In the last two years, each child□s height has increased by 5 percent.

15. Set T consists of a certain number of even integers divisible by 3. Is standard deviation of T positive?

    (1) All elements of set T are positive
    (2) The range of set T is 0

16. Website W receives orders for its products every day. What is the Standard Deviation of the number of orders that Website W received daily for the past 5 days?

    (1) The Average (Arithmetic Mean) number of orders that Website W received each per day for the past 5 days is equal to the greatest of the number of orders that Website W received daily for the past 5 days.

    (2) The range of the number of orders that Website W received daily for the past 5 days is Zero.

17. The lifetime of all the batteries produced by a certain company in a year have a distribution that is symmetric about the mean m. If the distribution has a standard deviation of d, what percent of the distribution is greater than m+d?

    (1) 68 percent of the distribution lies in the interval from m-d to m+d, inclusive
    (2) 16 percent of the distribution is less than m-d

18. A scientist recorded the number of eggs in each of 10 birds' nests. What was the standard deviation of the numbers of eggs in the 10 nests?

    (1) The average (arithmetic mean) number of eggs for the 10 nests was 4.
    (2) Each of the 10 nests contained the same number of eggs.

19. Is the standard deviation of the set of measurements x1, x2, x3, x4, ..., x20 less than 3 ?

    (1) The variance for the set of measurements is 4.
    (2) For each measurement, the difference between the mean and that measurement is 2.

20. During an experiment, some water was removed from each of the 6 water tanks. If the standard deviation of the volumes of water in the tanks at the beginning of the experiment was 10 gallons, what was the standard deviation of the volumes of water in the tanks at the end of the experiment?

    (1) For each tank, 30% of the volume of water that was in the tank at the beginning of the experiment was removed during the experiment.

    (2) The average (arithmetic mean) volume of water in the tanks at the end of the experiment was 63 gallons.

21. Is the standard deviation of the numbers X, Y and Z equal to the standard deviation of 10,15 and 20?

    (1) Z - X = 10
    (2) Z - Y = 5

22. Given that the mean of Set A is 10, what is the range of two standard deviations above and below the mean?

    (1) One standard deviation above and below the mean ranges from 7 to 13.

    (2) The median of set A is 11.

23. A store received 7 crates of oranges. What was the standard deviation of the numbers of oranges in the 7 crates?

    (1) For the 7 crates of oranges, the median of the numbers of oranges was equal to the greatest of the numbers of oranges.
    (2) For the 7 crates of oranges, the range of the numbers of oranges was 0.

24. The Department of Environmental Protection measured the volume of water in 10 similarly sized reservoirs in State X and found that the standard deviation of their volumes at the start of the year was 4 million cubic gallons. Was the standard deviation of those 10 volume measurements lower at the end of the year?

    (1) At the end of the year, the average volume of the water in the 10 reservoirs had decreased by 20%.

    (2) The percent decrease in the volume of the water in each reservoir during the year was the same.