koolearn
新东方在线

SAT数学

张斯乐

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2.Problem Solving & Data Analysis

2.5 Center, Spread, and Shape of Distributions

1. Mean（平均数）：

The arithmetic mean (or simply "mean") of a sample X1,X2,...,Xn , usually denoted by , is the sum of the sampled values divided by the number of items in the sample.

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2. Median（中位数）：

In statistics, a median is the number separating the higher half of a data sample, a population, or a probability distribution, from the lower half. The median of a finite list of numbers can be found by arranging all the observations from lowest value to highest value and picking the middle one. For example, the median of {3, 3, 5, 9, 11} is 5; the median of {3, 5, 7, 9} is (5 + 7) / 2 = 6.

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3. Mode（众数）：

The mode of a sample is the element that occurs most often in the collection.

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4. Range（极差）：

The range of a sample is the difference between the biggest element and the smallest element.

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5. Variance（方差）：
其中n为样本容量，x为样本平均值

$$s^2 = \frac{1}{n}[(x_1 - x)^2 + (x_2 - x)^2 + \cdots + (x_n - x)^2]$$

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6. Standard Deviation（标准差）：

标准差 s是方差的算数平方根。同样用来衡量数据的离散程度。
数据越集中，标准差和方差越小；越离散，标准差和方差越大。

$$s^2 = \frac{1}{n}[(x_1 - x)^2 + (x_2 - x)^2 + \cdots + (x_n - x)^2]$$

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2.5 Center, Spread, and Shape of Distributions

1.The mean score of 8 players in a basketball game was 14.5 points. If the highest individual score is removed, the mean score of the remaining 7 players becomes 12 points. What was the highest score?

A.20
B.24
C.32
D.36

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2.5 Center, Spread, and Shape of Distributions

2.

Electoral votes	Frequency
10	4
11	4
12	1
13	1
15	3
17	1
20	1
21	2
27	1
31	1
34	1
55	1

Based on the table, what was the median number of electoral votes for the 21 states?

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2.5 Center, Spread, and Shape of Distributions

3.

State	Percent of residents
State A	21.9%
State B	27.9%
State C	25.9%
State D	19.5%
State E	30.1%
State F	36.4%
State G	35.5%

What is the difference between the median percent of residents who earned a bachelor's degree or higher for these 7 states and the median for all 50 states?

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4.

Age	Frequency
18	6
19	5
20	4
21	2
22	1
23	1
30	1

A.mode<median<mean
B.mode<mean<median
C.median<mode<mean
D.mean<mode<median

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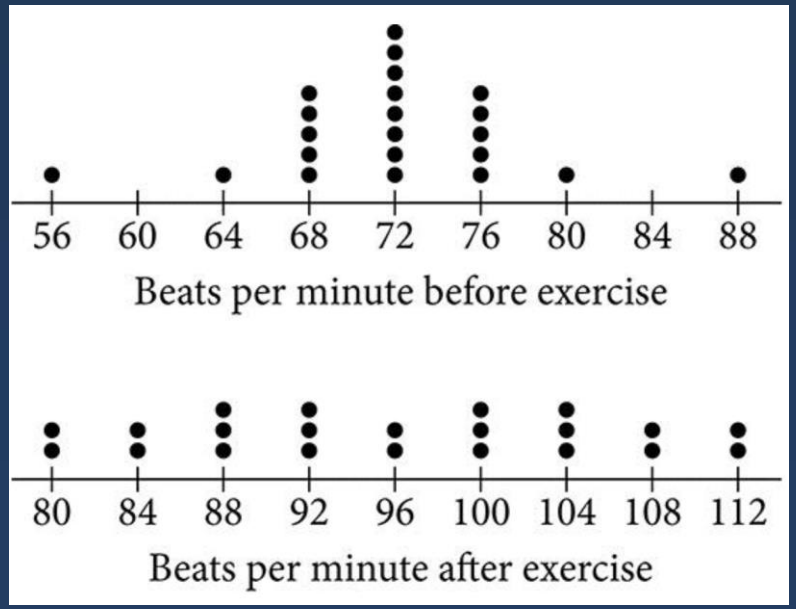
2.5 Center, Spread, and Shape of Distributions

5.



A. $s_1 = s_2$ and $r_1 = r_2$
B. $s_1 < s_2$ and $r_1 < r_2$
C. $s_1 > s_2$ and $r_1 > r_2$
D. $s_1 \neq s_2$ and $r_1 = r_2$

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6.

Number of days	Number of employees
0	8
1	4
2	3
4	4
5	5
13	1

What is the median number of days absent for the 25 employees last month?

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7.

	1	2	3	4	5	Total
Adult	13	35	103	82	17	250
Children	6	22	27	70	25	150
Total	19	57	130	152	42	400

How does the median rating of the adults who saw the movie compare to the median rating of the children who saw the movie?

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