MATHS

BOOKS - INDEPENDENTLY PUBLISHED MATHS (ENGLISH)

STATISTICS

Examples

1. The heights of the starting basketball team for South High School are 69'', 72'', 75'', 78'' and

78", Find the mean, median , and mode of this data set.

2. The mean of 24 test scores is 77.5. When the 25th class member takes the test, the mean down by 1.1 points. What was that 25h score?

3. What is the median of the frequency distribution shown in the table?

Data Value	Frequency
24	3
25	7
26	5
27	1

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4. In some schools, AP courses, honors coures, and college prep courses carry different weights in the computation of grade point averages. A given grade may carry a weight of

2 in an AP course, a weight of 1.5 in an honors course, and a weight of 1 in a college prep course. Suppose letter grades of A, B, C, D, and F are assigned values of 4, 3, 2, 1, and 0.

A student completes 6 courses with grades of a B and a C in 2 AP courses, an A and a C in 2 honors courses, and 2 As in college prep courses. What would that student's grade point average be?

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5. Find the range of the data values 85, 96, 72, 89, 66, and 78.

6. Which data set has the smaller standard deviation : $\{5, 7, 9\}$ or $\{4, 7, 10\}$?

7. A chart showing sports statistics for a particular school is shown below. Which is statistically a better score : 50.30 seconds in the backstroke or 74 inches in the high jumb?

Stroke	Mean	Standard Deviation
Backstroke	50.72 sec.	0.24 sec.
High Jumb	72.9 in.	0.54 in.

8. The decennial population of Center City for the past five decades is shown in the table below. Use exponential regression to estimate

the 1965 population.

Population of Center City

Year	Population
1950	48,000
1960	72,000
1970	95,000
1980	123,000
1990	165,000

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Exercises

1. Last week, police ticketed 13 men traveling 18 miles per hour over the speed limit and 8

women traveling 14 miles per hour over the speen limit. What was the mean speed over the limit of all 21 drivers?

A. 16 miles per hour

B. 16.5 miles per hour

C. 16.5 miles per hour

D. 17 miles per hour

Answer: B

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2. Wanda wants to choose her "best-fit" college in a systematic way. Academic reputation (AR), sports reputation (SR), social life (SL), and cost (C) are the four factors that Wanda considers for all her colleges. She plans to score the colleges on these factors using a scale of 1 to 5, with 5 being the highest, and she attaches the following weights: AR (40%) . SR (10%) , SL (15%), and $C(35\%)$. Her scores for these categores at one school are AR, 4, SR, 3, SL, 5, C,2. What is the weighted overall average score for this school?

A. 3.35

B. 3.5

C. 3.85

D. 4.25

Answer: A

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3. If the range of a set of integers is 2 and the mean is 50, which of the following statements must be true?

I. The mode is 50.

II. The median is 50.

III. There are exactly three data value.

A. only I

B. only II

C. only III

D. I and II

Answer: B

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4. What is the median of the frequency distribution shown below?

A. 2

B. 3

C. 4

D. cannot be determined

Answer: B

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5. Which of the following statements must be true ? I. The range of a data set must be smaller than its standard deviation.

II. The standard deviation of a data set must be smaller than its mean.

III. The median of a data set must be smaller than its mode.

A. I only

B. I and II

C. II only

D. none are true

Answer:

6. The mean and standard deviation for SATmath math scores are shown in the table below for five high schools in a large city. A particular score for each school is also shown (in the right column).

Which single score has the highest z-score ?

A. 474 in school D

B. 552 in school E

C. 560 in school B

D. 561 in school C

Answer: A

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7. Jack recorded the amount of time he studied

the night before each of 4 history quizzes and

the score he got on each quiz. The data are in

the table below.

Use linear regression to estimate the score Jack would get if he studied for 20 minutes.

A. 71

B. 72

C. 73

D. 74

Answer: B

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8. The scatterplot shows gas mileage (miles per gallon) at various speeds (miles per hour) when a car was driven 100 miles at various speeds on a test track.

Which regression model is probably the best predictor of gas mileage as a function of speed?

A. constat

B. linear

C. quadratic

D. cubic

Answer: C

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