

Multiple Choice (1 pt. each)

The graph below shows cumulative proportions plotted against grade point averages for a large public high school.

1. The five number summary for a set of test scores is shown below. Given that the mean of this set is 87.32, the data can be described as

- (a) skewed left
- (b) skewed right
- (c) not enough information is given
- (d) bimodal
- (e) normal

minX=42
 Q₁=76.5
 Med=92
 Q₃=99
 maxX=100

2. In this set, the score 42 is

- (a) a minimum
- (b) in the tenth percentile
- (c) an outlier
- (d) (a), (b), and (c)
- (e) (a) and (c)

3. Mr. Murphy has all the Chapter 2 Test scores in the history of SI AP Stats classes and finds that the data has a normal distribution. A summary is shown below:

$\mu = 75$ $\sigma = 7.5$ min = 50 max = 99 median = 75 Q₁ = 69 Q₃ = 80

Based on this summary, we can assume that:

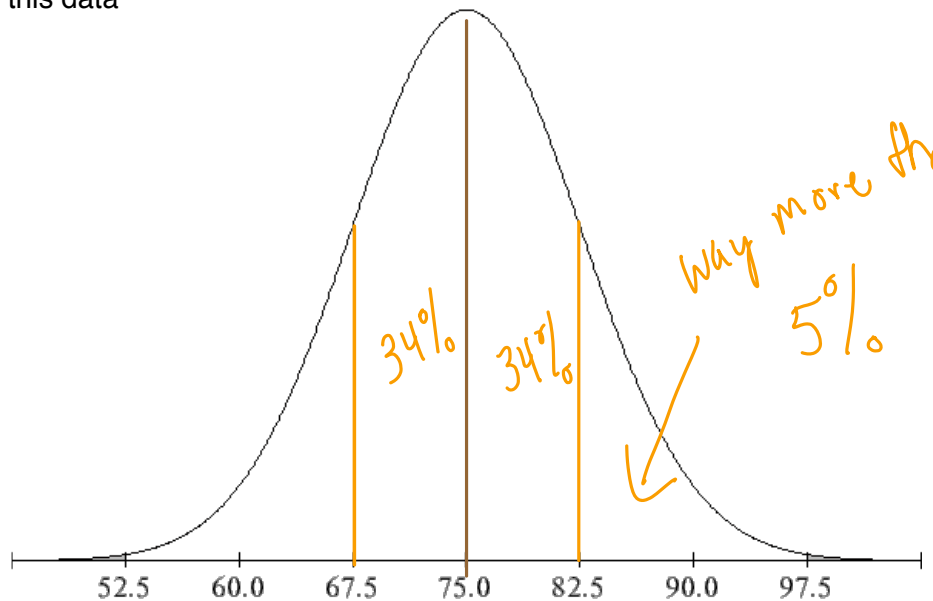
- I. Approximately 34% of the scores fall between 67.5 and 75
- II. Approximately 5% of the scores are greater than 82.5
- III. There are no outliers in this data

check
 Q₁ - 1.5(σ) ←

Q₃ + 1.5(σ)

Safety zone is
 from 52.5 to
 96.5

- (a) II and III are true
- (b) I and II are true
- (c) I and III are true
- (d) Only II is true
- (e) Only I is true



4. The 5-number summary of credit hours for 24 students in a statistics class is:

Min	Q1	Median	Q3	Max
13	15	16.5	18	22

From this information we know that

- (a) there are both low and high outliers in the data.
- (b) there are no outliers in the data.
- (c) there is at least one low outlier in the data.
- (d) there is at least one high outlier in the data.
- (e) none of these

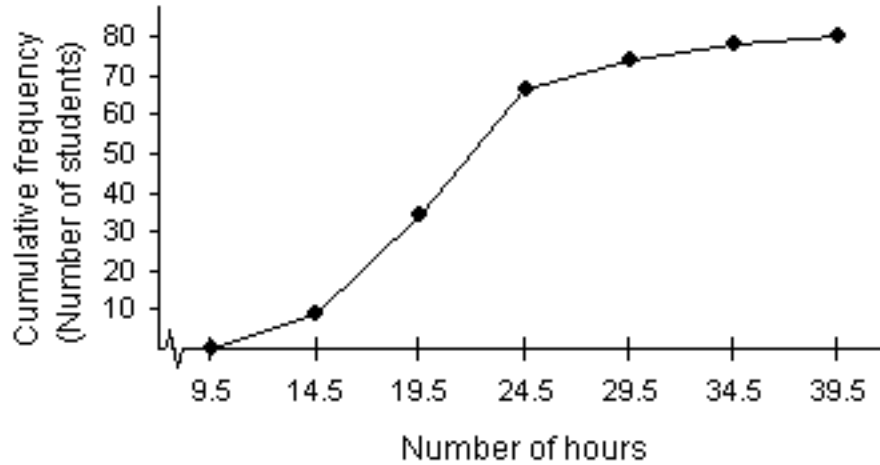
$$IQR = 3.0$$

$$1.5(3.0) = 4.5$$

$$\left. \begin{aligned} Q_3 + 4.5 &= 22.5 \\ Q_1 - 4.5 &= 11.5 \end{aligned} \right\} \text{safely zone}$$

5. Use the graph below to approximate the number of students in the sample.

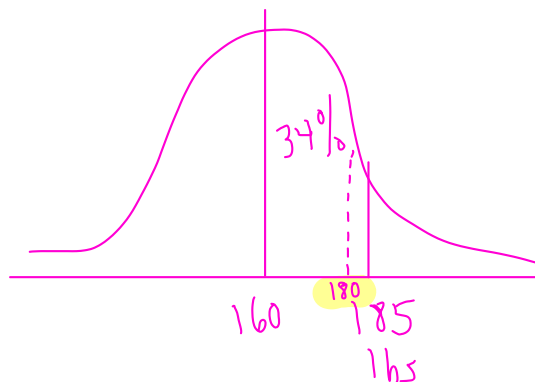
Leisure Time of College Students



- (a) 341
- (b) 80
- (c) 28
- (d) 100
- (e) 39.5

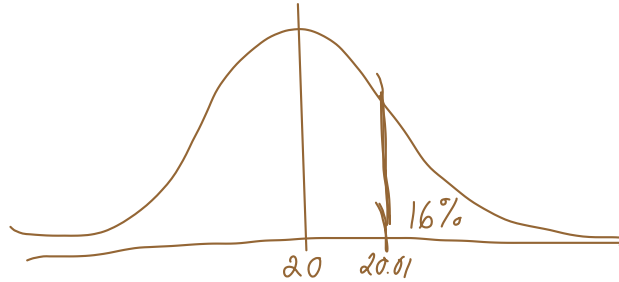
6. You measured the weights of members of population W and found the weights to be normally distributed. The distribution has a mean weight of 160 pounds and a population standard deviation of 25 pounds. What is the percentile weight for 181 pounds?

- (a) 50th percentile
- (b) 10th percentile
- (c) 30th percentile
- (d) 80th percentile
- (e) 90th percentile

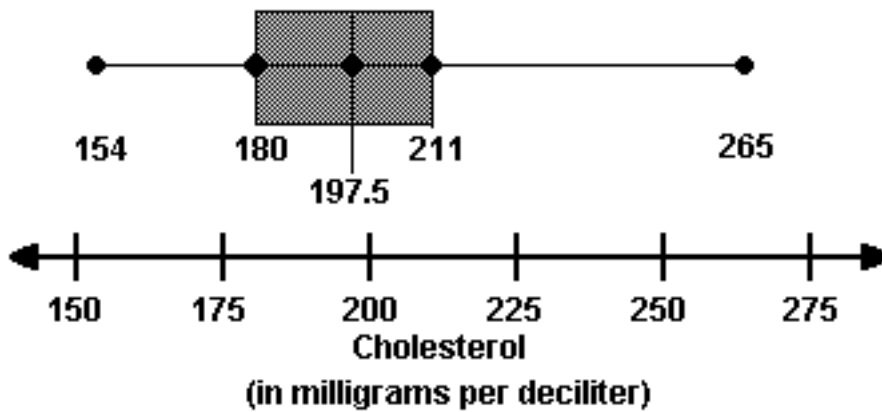


7. A population of bolts has a normal distribution with a mean thickness of 20 millimeters, with a population standard deviation of 0.01 millimeters. Give, in millimeters, the thickest 16% of the population of bolts should be

- (a) larger than 20.00 millimeters
- (b) no larger than 20.01 millimeters
- (c) exactly 20.02 millimeters
- (d) larger than 20.02 millimeters
- (e) larger than 20.01 millimeters**



8. Use the box-and-whisker plot below to determine which statement is accurate.



- (a) About 25% of the adults have cholesterol levels of at most 211.
- (b) About 75% of the adults have cholesterol levels less than 180.
- (c) One half of the cholesterol levels are between 180 and 197.5.
- (d) One half of the cholesterol levels are between 180 and 211.**
- (e) None of the above.

9. The heights (in inches) of 10 adult males are listed below. Find the sample standard deviation of the data set.

70 72 71 70 69 73 69 68 70 71

- (a) 70.3
- (b) 2
- (c) 1.49**
- (d) 70
- (e) 1.42

10. If the largest value of a data set is doubled, which of the following is false?

- (a) The mean increases.
- (b) The standard deviation increases.
- (c) The interquartile range increases.
- (d) The range increases.
- (e) The median remains unchanged.