1.1-2

A survey of college students collected information on several variables: distance from home, age, major, gender, and class.

The variable major is

a. quantitative.

b. categorical.

c. neither categorical nor numeric.

1.1-2 answer

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The variable major is

a. quantitative.

b. categorical. (correct)

c. neither categorical nor numeric.

1.1-3

On a job application, there are a number of questions:

- What is your Social Security number?

- What is your address?

- What is your phone number?

Which of the above variables are NOT categorical?

a. Social Security number

b. address

c. phone number

d. none, they are all categorical variables

1.1-3 answer

On a job application, there are a number of questions:

- What is your Social Security number?

- What is your address?

- What is your phone number?

Which of the above variables are NOT categorical?

a. Social Security number

b. address

c. phone number

d. none, they are all categorical variables (correct)

1.2-3

The professor of a large statistics class decided to take a survey of what models of cars her students drive. The results are illustrated below. What type of display is this?

a. bar graph

b. histogram

c. stemplot
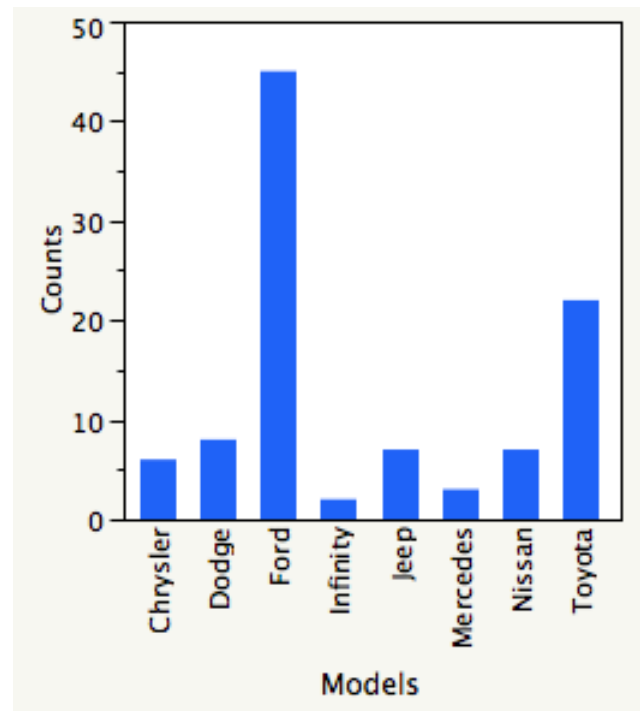
1.2-3 answer

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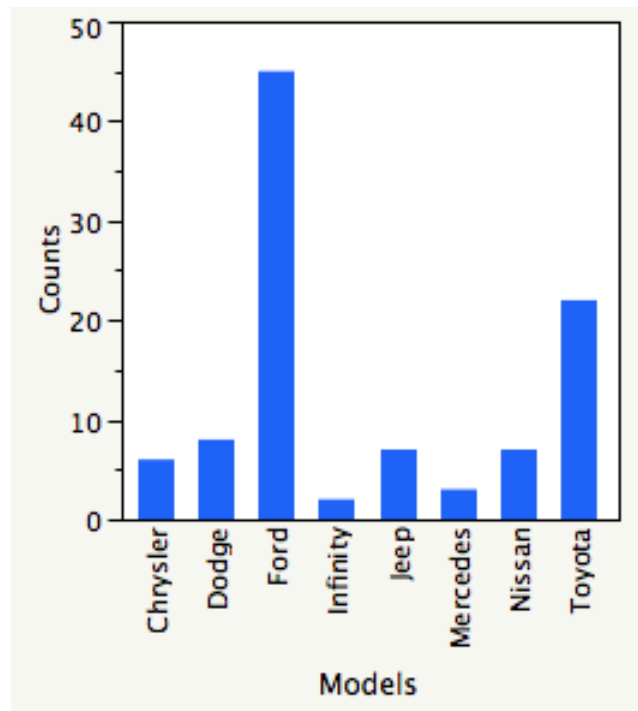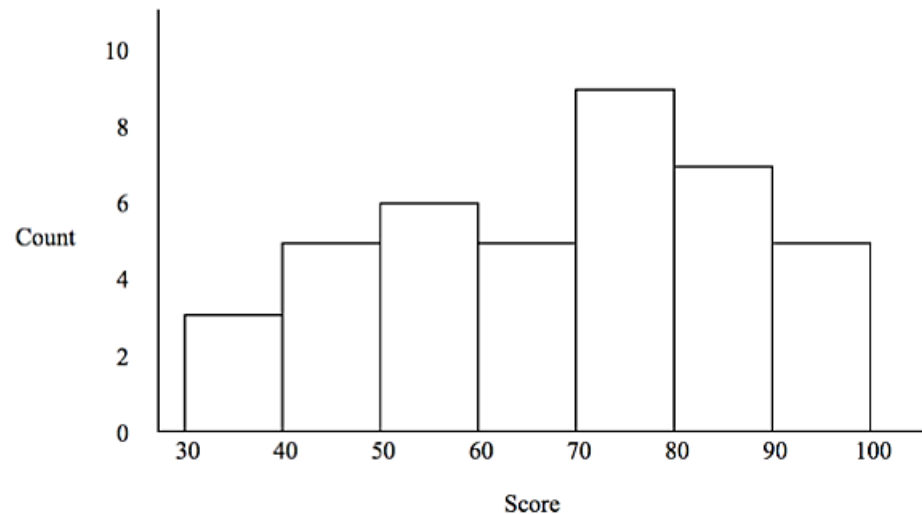
a. bar graph (correct)

b. histogram

c. stemplot

1.2-6

Test scores for a class of 40 students are displayed in the histogram below, a grade of 60 or higher is required to pass the test. What percentage of students passed the test?

a. 55%

b. 60%

c. 65%

d. 70%

e. 75%

Test scores for a class of 40 students are displayed in the histogram below, a grade of 60 or higher is required to pass the test. What percentage of students passed the test?
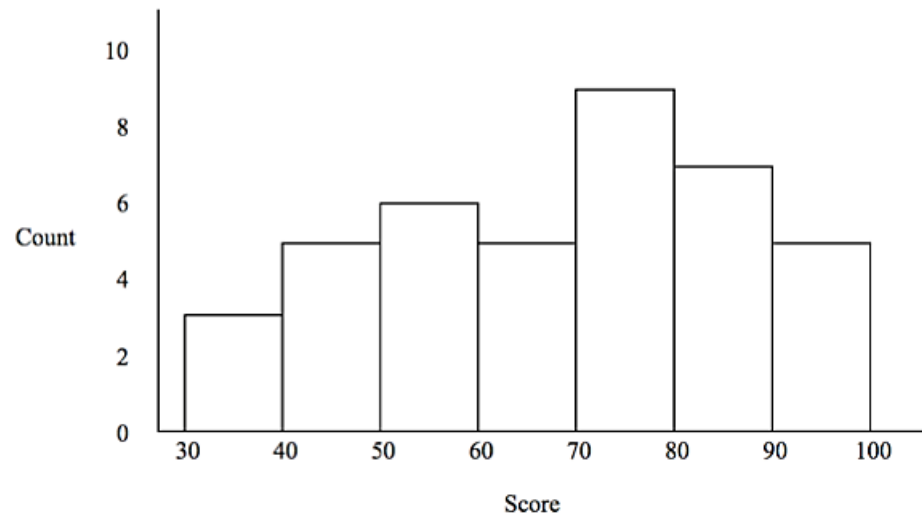
a. 55%

b. 60%   (5+9+7+5)/40 =
          26/40 = 0.65

c. 65% (correct)

d. 70%

e. 75%
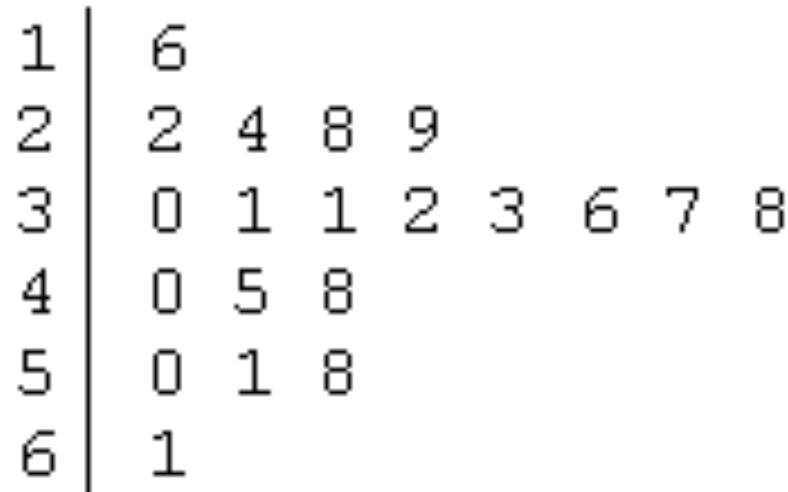
1.3-2

Consider the following stemplot. The *median* of the data represented in this stemplot

```
1 | 6
2 | 2 4 8 9
3 | 0 1 1 2 3 6 7 8
4 | 0 5 8
5 | 0 1 8
6 | 1
```

a. is 30.5.

b. is 34.5.

c. cannot be computed from the information given.

Consider the following stemplot. The *median* of the data represented in this stemplot

```
1 | 6
2 | 2 4 8 9
3 | 0 1 1 2 3 6 7 8
4 | 0 5 8
5 | 0 1 8
6 | 1
```

a. is 30.5.

b. is 34.5. (correct) $\dfrac{33+36}{2}$

c. cannot be computed from the information given.

1.3-4

The average GPA of 40 students in a statistics class is 3.46, while the average GPA of the 32 students in the calculus class across the hall is 3.58. Two students from the calculus class, both with a GPA of 3.71, decide to drop the course and enter into the statistics class. What are the new average GPAs of the statistics and calculus classes, respectively?

a. 3.63 and 3.84

b. 3.59 and 3.71

c. 3.47 and 3.57

1.3-4 answer

The average GPA of 40 students in a statistics class is 3.46, while the average GPA of the 32 students in the calculus class across the hall is 3.58. Two students from the calculus class, both with a GPA of 3.71, decide to drop the course and enter into the statistics class. What are the new average GPAs of the statistics and calculus classes, respectively?

a. 3.63 and 3.84

b. 3.59 and 3.71

c. 3.47 and 3.57 (correct)

$$3.46 = \frac{\sum x_i}{40} = 138.40$$
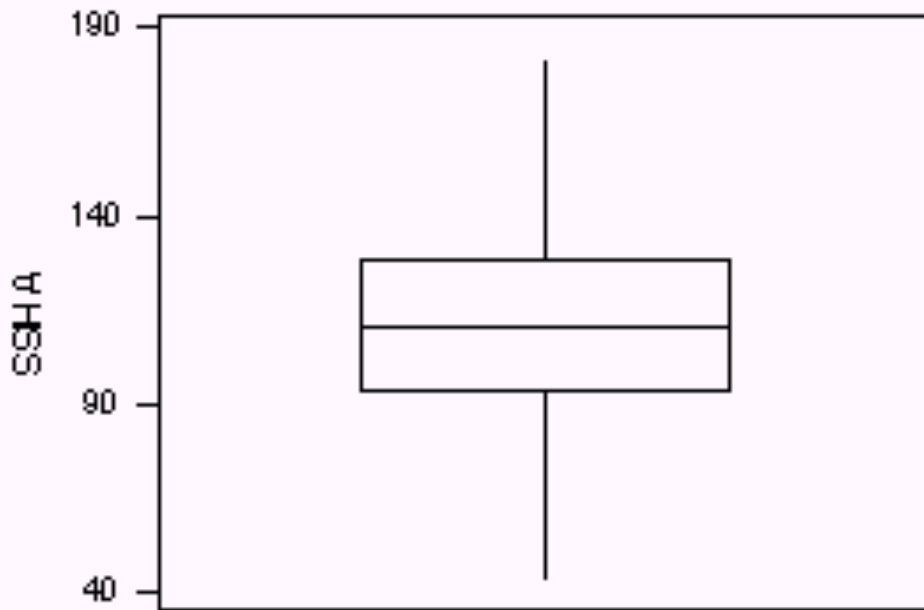
$$3.58 = \frac{\sum x_i}{32} = 114.56$$

with new students

$$\bar{x} = 3.47$$

$$\bar{x} = 3.57$$

The scores on the Survey of Study Habits and Attitudes (SSHA) for a sample of 150 first-year college women produced the following boxplot and descriptive statistics using MINITAB. The number of women with scores between 93.26 and 129.23 is

Descriptive Statistics

Variable	N	Median	Min
SSHA	150	110.68	42.49
	Max	Q1	Q3
	182.71	93.26	129.23

a. about 75.
b. about 50.
c. about 36.

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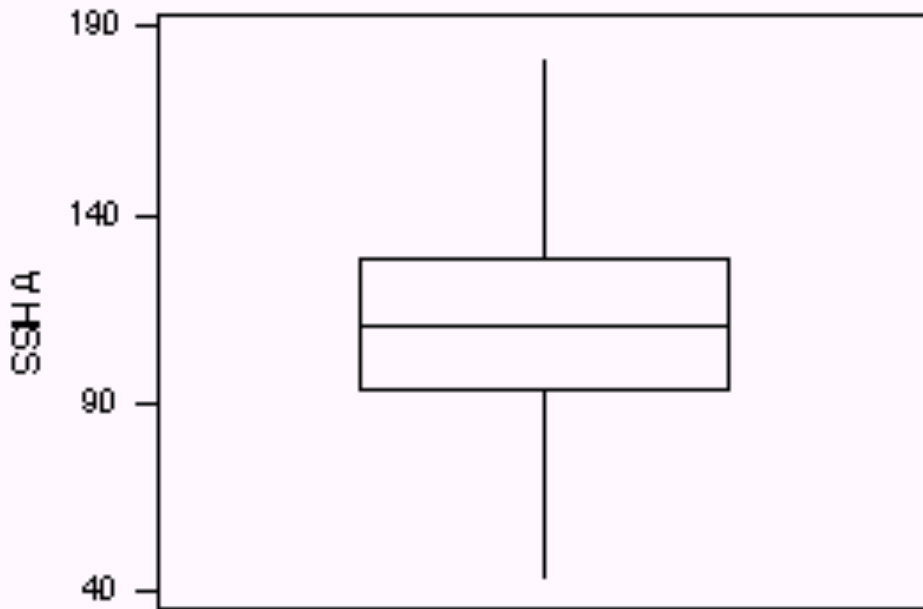

Descriptive Statistics

Variable	N	Median	Min
SSHA	150	110.68	42.49
	Max	Q1	Q3
	182.71	93.26	129.23

a. about 75. (correct) $150 \cdot (0.50)$
b. about 50.
c. about 36.

1.3-6

A sample was taken of the salaries of 20 employees from a large company. The following are the salaries (in thousands of dollars) for this year (the data are ordered).

28	31	34	35	37	41	42	42	42	47	49	51	52	52	60	61	67	72	75	77

Suppose each employee in the company receives a $3000 raise for next year (each employee's salary is increased by $3000). The interquartile range (*IQR*) of the salaries will

a. be unchanged.
b. increase by $3000.
c. be multiplied by $3000.

1.3-6 answer

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a. be unchanged. (correct)
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1.3-7

A distribution has a mean of 100 and a median of 120. The shape of this distribution is most likely

a. skewed left.

b. skewed right.

c. symmetric.

1.3-7 answer

A distribution has a mean of 100 and a median of 120. The shape of this distribution is most likely

a. skewed left. (correct)

b. skewed right.

c. symmetric.

1.3-8

Which of the following measures is least affected by outliers?

a. the mean

b. the standard deviation

c. the *IQR*

1.3-8 answer

Which of the following measures is least affected by outliers?

a. the mean

b. the standard deviation

c. the *IQR* (correct)

A teacher gave a 25-question multiple-choice test. After scoring the tests, she computed a mean and standard deviation of the scores. The standard deviation was *0*. Based on this information

a. all the students had the same score.

b. she must have made a mistake.

c. about half the scores were above the mean.

1.3-11 answer

A teacher gave a 25-question multiple-choice test. After scoring the tests, she computed a mean and standard deviation of the scores. The standard deviation was *0*. Based on this information

a. all the students had the same score. (correct)

b. she must have made a mistake.

c. about half the scores were above the mean.

The five-number summary of scores on a test is:

35   60   65   70   90

Based on this information

a. there are no outliers.

b. there are low outliers.

c. there are both high and low outliers.

1.3-12 answer

The five-number summary of scores on a test is:

35   60   65   70   90

-15   15

Based on this information

a. there are no outliers.

b. there are low outliers.

$1.5\,(IQR) = 15$

c. there are both high and low outliers.

(correct)

1.4-1

The time for students to complete a standardized placement exam given to college freshman has a Normal distribution with a mean of 62 minutes and a standard deviation of 8 minutes. If students are given 1 hour to complete the exam, the proportion of students who will complete the exam is about

a. 0.25.

b. 0.40.

c. 0.60.

1.4-1 answer

The time for students to complete a standardized placement exam given to college freshman has a Normal distribution with a mean of 62 minutes and a standard deviation of 8 minutes. If students are given 1 hour to complete the exam, the proportion of students who will complete the exam is about

a. 0.25.

b. 0.40. (correct)   *P(z < -0.25)*

c. 0.60.

1.4-2

The scores on a university examination are Normally distributed with a mean of 62 and a standard deviation of 11. If the top 10% of students are given an A, what is the lowest mark a student can have and still be awarded an A?

a. 63.28

b. 70.97

c. 76.08

1.4-2 answer

The scores on a university examination are Normally distributed with a mean of 62 and a standard deviation of 11. If the top 10% of students are given an A, what is the lowest mark a student can have and still be awarded an A?

a. 63.28

b. 70.97

c. **76.08 (correct)**   62 + (1.28)(11)

1.4-5

The most common intelligence quotient (IQ) scale is Normally distributed with mean 100 and standard deviation 15. Many school districts across the country seek to identify "gifted and talented" children for special enrichment programs. Typically, these children must have IQ scores in the top 5%. What is the minimum score to qualify a child for these programs?

a. 130

b. 125

c. 115

1.4-5 answer

The most common intelligence quotient (IQ) scale is Normally distributed with mean 100 and standard deviation 15. Many school districts across the country seek to identify "gifted and talented" children for special enrichment programs. Typically, these children must have IQ scores in the top 5%. What is the minimum score to qualify a child for these programs?

a. 130

b. 125 (correct)   (1.645)(15) + 100 = 124.675

c. 115