

Multiple Choice: Identify the choice that best completes the statement or answers the question.

Find the mean, median, and mode of the data set. Round to the nearest tenth.

1. 15, 13, 9, 9, 7, 1, 11, 10, 13, 1, 13

A. mean = 9.3, median = 8, mode = 13
C. mean = 9.3, median = 10, mode = 13

X. mean = 8.5, median = 10, mode = 13
X. mean = 8.5, median = 10, mode = 8

2. Test scores on a math exam:

100, 77, 82, 69, 84, 70, 100, 93, 80, 82, 83, 78, 80, 78, 70, 82, 89, 97, 71, 83, 93, 87

A. mean = 83.1, median = 84.5, mode = 82
X. mean = 76.2, median = 82, mode = 82

3. A set of data always has one and only one median.
A. always B. sometimes C. never

Find the range and interquartile range of the data. Round to the nearest tenth.

4. 44, 45, 38, 8, 40, 35, 10, 55, 23, 36

X. range = 37, interquartile range = 21
D. range = 47, interquartile range = 14

Find the mean and standard deviation of the data. Round to the nearest tenth.

5. 20, 16, 18, 14, 9, 20, 16

X. mean = 16, standard deviation = 3.6
B. mean = 16.1, standard deviation = 12.7

6. Find the variance of this data set {9, 8, 10, 9, 8, 5}. Round to the nearest tenth.

A. variance = 1.6 B. variance = 2.6 C. variance = 8.2 D. variance = 2.9

7. What are the minimum and maximum (after factoring in any outliers) of the set data: {24, 28, 29, 35, 30, 31, 29}?

A. min = 24, max = 35 B. min = 10, max = 35
C. min = 16.75, max = 38.75 D. min = 24, max = 31

$Q_1 = 25$
 $Q_3 = 30.5$
 $IQR = 30.5 - 25 = 5.5$
 $1.5 \times 5.5 = 8.25$
 $25 - 8.25 = 16.75$
 $30.5 + 8.25 = 38.75$
min = 16.75
max = 38.75

8. Find the outlier boundaries for the following data set: 55, 63, 91, 51, 78, 45, 48, 76, 99, 99

A. lower = -9, upper = 151
B. lower = 11, upper = 131
C. lower = 10.5, upper = 111
D. lower = 29.5, upper = 109.5

9. During his 20 seasons in the NHL, Wayne Gretzky scored 50% more points than anyone who ever played professional hockey. He accomplished this amazing feat while playing in 260 fewer games than Gordie Howe, the previous record holder. Here are the number of games Gretzky played during each season.

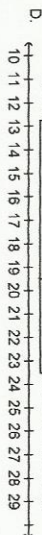
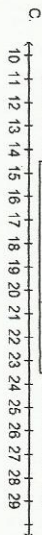
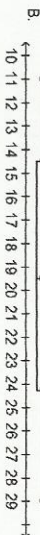
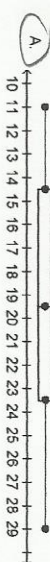
79	80	80	74	80	80	79	64	78
73	78	74	45	81	48	80	82	70

Which stem-and-leaf plot is appropriate for this data?

- A. 4|58 5|1 6|4 7|0344899 8|00000122 9|1
B. 4|58 5|1 6|4 7|0344899 8|00000122 9|1
C. 4|58 5|1 6|4 7|0344899 8|00000122 9|1
D. 4|58 5|1 6|4 7|0344899 8|00000122 9|1

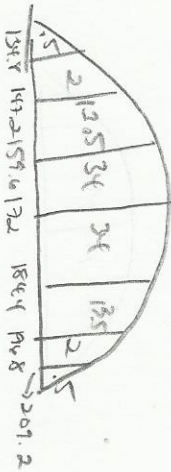
Make a box-and-whisker plot of the data.

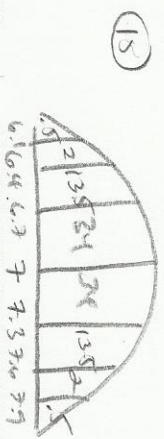
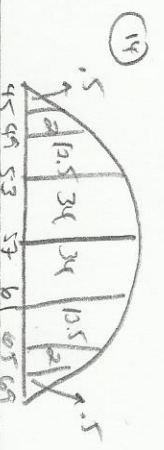
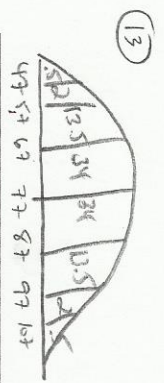
10. 24, 18, 29, 21, 16, 23, 13, 11



A forest products company claims that the amount of usable lumber in its harvested trees averages 172 cubic feet and has a standard deviation of 124 cubic feet. Assume that these amounts have approximately a normal distribution.

11. What proportion of trees contain more than 159.6 cubic feet?
A. 34 B. 50 C. 68 D. 84
12. If a tree is selected at random, what is the probability that it will yield less than 147.2 cubic feet?
A. 34 B. 13.5 C. 25 D. 20





Use what you know about Normal Distributions to answer the following questions.

13. The scores on an exam are normally distributed, with a mean of 77 and a standard deviation of 10. What percent of the scores are greater than 87?
 A. 68% **B. 16%** C. 84% D. 2.5%

14. The numbers of cookies in a shipment of bags are normally distributed, with a mean of 57 and a standard deviation of 4. What percent of bags of cookies will contain between 49 and 65 cookies?
 A. 2.5% B. 16% **C. 95%** D. 47.5%

15. Brenda's Bountiful Chocolate Bon-Bons are packaged in small bags. The weight of the bags is normally distributed with a mean of 7.6 ounces and a standard deviation of 0.3 ounces. During a routine check, 8 of the bags had weights of more than 7.6 ounces. How many bon-bon bags were sampled?
 A. 28 B. 32 C. 280 **D. 320**

Use what you know about Margin of Error to answer the following questions.

16. Although skim milk has as much calcium as whole milk, only 33% of 2406 adults surveyed in SHAPE magazine said skim milk is a good calcium source. What is the margin of error for this survey?
 A. 9.686 **B. 0.019** C. 0.009 D. 0.038

17. In a recent Harris Poll, 61% of the people surveyed said they considered being a physician to be a very prestigious occupation. The margin of error was 3%. How many people were surveyed?
 A. 1189 B. 660 **C. 1057** D. 529

18. A grocery store chain contacted a random group of customers who spent an average of at least \$100 on a weekly basis. 83% said they were "somewhat satisfied" with their store's service. The margin of error was 4%. How many customers were contacted by the researchers?
 A. 117 B. 1017 **C. 278** D. 297

19. In a survey of U.S. citizens aged 65 and over, 399 people were asked about their participation in activities at their local Senior Citizen Center. The margin of error was 5%. How many said they participated?
 A. 37.5% B. 62.5% **C. 42.5%** D. 47.5%

$$ME = 2 \sqrt{p(1-p)}$$

$$ME = 2 \sqrt{.33(1-.33)}$$

$$.03 = 2 \sqrt{.33(1-.33)}$$

$$.045 = 2 \sqrt{.83(1-.83)}$$

$$.05 = 2 \sqrt{p(1-p)}$$

$$ME = .019$$

$$.015 = \sqrt{\frac{.2337}{n}}$$

$$.025 = \sqrt{\frac{.1411}{n}}$$

$$6.25 \times 10^{-4} = \frac{p-p^2}{399}$$

$$2.25 \times 10^{-4} = \frac{.2337}{n}$$

$$5.0625 \times 10^{-4} = \frac{.1411}{n}$$

$$.249375 = p - p^2$$

$$n = 1057$$

$$n = 278$$

$$p - p^2 - .249375 = 0$$

$$47.5\% \text{ or } 50.5\%$$

20. A select group of 40 students were surveyed concerning their movie preferences. The table below shows the data that was collected:

Movie Type	Comedy	Romance	Drama	Action
Percent	35%	20%	30%	15%
Frequency	14	8	12	6

Which bar chart below correctly displays this data?

