

Module Test **B**

Module 19

Fill in the blanks with the term that best completes each statement.

1. The average of a set of values is also called the **mean** _____.
2. A circle graph is often called a **pie chart** _____.
3. In a box-and-whiskers plot, the lower 25% of the data and the upper 25% of the data are indicated by the **whiskers** _____.
4. The quartiles are the **medians** _____ of each half of the data set.
5. If the data in a set is spread out, the deviation will be **large** _____.

Determine whether the following statements true or false:

6. It is possible to have more than one mode for a data set. **True** _____
7. It is possible to have more than one median for a given data set. **False** _____
8. It is possible to have more than one mean for a given data set. **False** _____
9. The values in a data set must be in order to find the median. **True** _____
10. The median and mode of a set will always be the same value. **False** _____
11. Absolute deviation from the mean may be positive or negative. **False** _____
12. The sum of the absolute deviations from the mean is never negative. **True** _____
13. A line graph uses line segments between data points. **True** _____
14. In a box-and-whisker plot, the median cuts the box exactly in half. **False** _____
15. The independent variable in a scatter plot is graphed on the horizontal axis. **True** _____

Choose the correct response to complete each of the following:

16. The middle value of a data set, when arranged in order, is the
a. mean **b.** median c. mode d. range
17. When creating a stem-and-leaf plot, the part represented by the leaf is
a. the first digit **b.** the last digit c. all except the first digit d. all except the last digit

18. The best graph to show trends in data is a
 a. line graph b. bar graph c. circle graph d. scatter plot
19. The best graph to compare parts to the whole is a
 a. line graph b. bar graph c. circle graph d. scatter plot
20. A positive slope between points on a line graph indicates
 a. an increase b. a decrease c. no change d. a sharp change
21. A horizontal line segment between points on a line graph indicates
 a. an increase b. a decrease c. no change d. a sharp change
22. In a circle graph, the sector with a center angle of 180° represents
 a. 25% of the data b. 50% of the data c. 75% of the data d. 100% of the data
23. The amount of data within the range is
 a. 25% b. 50% c. 75% d. 100%
24. If the relationship between two sets of data is such that the dependent variable is increasing as the independent variable is increasing, then the correlation
 a. is positive b. is negative c. does not exist; no correlation d. cannot be determined
25. A line of fit can be used to
 a. describe trends of data b. make predictions c. demonstrate correlations d. all of the above
26. The number of seconds required to accelerate from 0 to 60 mph is given for large SUV's in the set {9.3, 9.3, 9.6, 9.7, 9.8, 10.1, 10.2, 10.7}. Find the

a. mean 9.84 (rounded) seconds

c. mode 9.3 seconds

e. mean absolute deviation 0.37 (rounded)

g. Q_1 9.45 seconds

i. range 1.4

k. stem-and-leaf plot

$$\begin{array}{r|l} 9 & 3 \ 3 \ 6 \ 7 \ 8 \\ 10 & 1 \ 2 \ 7 \end{array} \quad 9|8 = 9.8$$

b. median 9.75 seconds

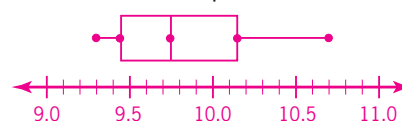
d. deviations from the mean -0.54, -0.54, -0.24, -0.14, -0.04, 0.26, 0.36, 0.86 NOTE: due to rounding, sum not exactly zero

f. minimum and maximum 9.3 seconds and 10.7 seconds

h. Q_3 10.15 seconds

j. interquartile range 0.7 seconds

l. box-and-whisker plot



27. The purse, in thousands of dollars, to the winners of the Masters golf tournament for several years is given as follows: 1989 was \$200; 1990 was \$225; 1991 was \$243; 1992 was \$270; 1993 was \$306; 1994 was \$360; 1995 was \$396; 1996 was \$450; 1997 was \$486; 1998 was \$576; 1999 was \$720; 2000 was \$828; 2001 was \$1008; 2002 was \$1008; and 2003 was \$1080.

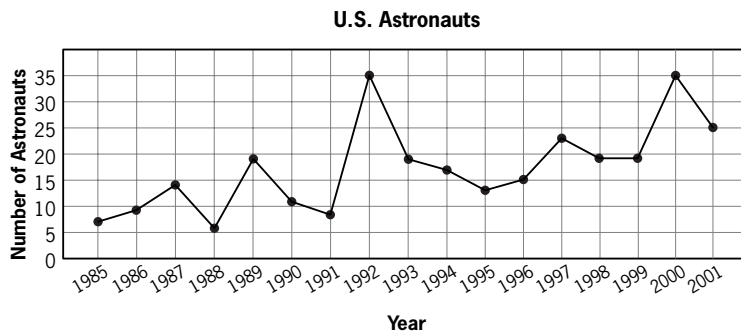
a. Create a scatter plot.



b. What type of correlation does the graph represent? Positive correlation

c. Draw a line of fit. List two possible points of the scatter plot through which it crosses. (1992, 270) and (2000, 828)

28. The line graph shows the number of U.S. astronauts in the space program each year.

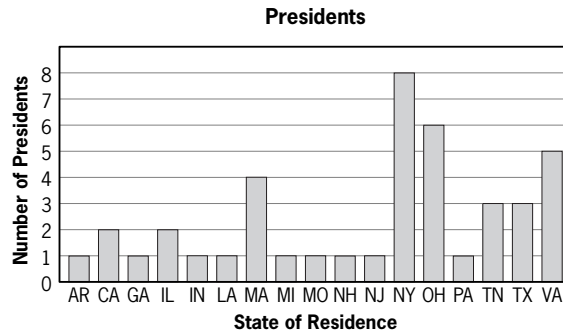


a. What trend is displayed on the graph? Overall, the number of astronauts in the space program is increasing.

b. In which two years were there the most U.S. astronauts in the space program? 1992 and 2000

c. Between what two years did the number of U.S. astronauts in the space program remain constant? 1998 and 1999

29. The bar graph shows the United States Presidents by the states from which they were elected.



- a. From which state was the greatest number of United States Presidents?

New York

- b. How many United States Presidents were from Texas? **Three**

- c. From which state(s) has (have) two United States Presidents been elected?

California and Illinois

Answer the following problems with complete sentences:

30. Explain how the median is found for a set having an even number of values. Put the values in order.

The two middle values are found, and their average is the median of the set.

31. Name the parts of the five-number summary. Explain how the summary is used to create a box-and-whiskers plot. **The five-number summary includes the min-**

imum, first quartile, median, third quartile, and maximum. To create a

box-and-whiskers plot, these values are marked on a number line. The

box portion of the plot has the first quartile as its left side and the third

quartile as its right side. A vertical line segment is drawn in the box

through the median. The whiskers' portions of the plot are drawn from

the left side of the box to the minimum and from the right side of the

box to the maximum.