**1**. You have data for many years on the average price of a barrel of oil and the average retail price of a gallon of unleaded regular gasoline. When you make a scatterplot, you should

\* a. plot the explanatory variable, price of oil, on the x-axis.

b. plot the response variable, price of gasoline, on the x-axis.

c. plot either price of oil or price of gasoline on the x-axis.

d. use a plotting scale that makes the overall trend roughly linear.

**2**. In a scatterplot of the average price of a barrel of oil and the average retail price of a gallon of gasoline, you expect to see

a. a negative association.

\* b. a positive association.

c. a weak association.

d. a nonlinear association.

Use the following to answer Questions 3-7.

The following scatterplot illustrates the relationship between school GPA and IQ test scores for seventh grade students.



**3**. The strength of the correlation between the explanatory and response variable is

a. Moderate

\* b. Strong

c. Weak

d. Cannot be determined by the plot

**4.** There is one outlier in the plot. The IQ and GPA scores for this student are

a. QPA: 4.3 IQ: 130

b. QPA: 105 IQ: 1.4

\* c. QPA: 1.4 IQ: 105

d. QPA: 2.3 IQ: 82

**5**. The scatterplot suggests

a. There is a positive association between school GPA and IQ test scores.

b. There is an outlier in the plot.

\* c. Both a and b

d. Neither a nor b

**6.** If you leave out the outlier, the correlation for the remaining 13 points is closest to

a. 0

b. -0.9

\* c. 0.9

d. 0.1

**7**. In this study, the explanatory variable is

\* a. IQ test score.

b. School GPA.

c. The measuring instrument used to test IQ.

d. It doesn’t matter which is considered the explanatory. Either variable is appropriate.

Use the following to answer Questions 8-9

Because elderly people have difficulty standing to have their heights measured, a study looked at predicting height from height to knee. Here are the data in centimeters for six elderly men:

Knee Height 57.7 47.4 43.5 44.8 55.2 54.6

Height 192.1 153.3 146.4 162.7 169.1 177.8

**8.** Which of the following is true for this study?

a. Knee height is the response variable and height is the explanatory.

\* b. Knee height is the explanatory variable and height is the response.

c. It does not matter which variable is chosen to be the response or explanatory.

d. None of the above

**9.** Use your calculator: The correlation between knee height and height is

a. 0.73

b. 0.67

c. -0.54

\* d. 0.89

**10**. The form of the relationship in the following scatterplot might best be described as



a. Positive and linear

b. Curved

\* c. Clustered

d. None of the above

**11.** What are the values that a correlation r can possibly take?

a. r ≥ 0

b. 0 ≤ r ≤ 1

\* c. -1 ≤ r ≤ 1

d. -1 ≤ r ≤ 0

**12.** If the correlation between two variables is close to 0, you can conclude that a scatterplot would show

a. a strong straight line pattern

\* b. a cloud of points with no visible pattern

c. no straight line pattern, but there might be a strong pattern of another form

d. cannot tell without seeing a plot

**13.** The points on a scatterplot lie very close to a straight line. The correlation between x and y is close to?

a. -1

b. 1

c. 0

\* d. Either a or b depending on the direction of the line

**14.** For a biology project, you measure the weight in grams and the tail length in millimeters of a group of mice. The correlation is r=0.7. If you had measured tail length in centimeters instead of millimeters, what would be the correlation?

\* a. 0.7

b. 0.07

c. 7

d. 70