You may work with in a group of as many as three students on this quiz, handing in one quiz with all names, provided that you all contribute to the work. You may use your notes.

1. Suppose that a study measures how far each student sits from the front of the classroom and also records the student’s final exam score. If better students tend to sit closer to the front, would the correlation between distance and exam score be positive, negative, or close to zero? (Do not bother to explain.)

2. Suppose that you record the daily high temperature and the daily amount of ice cream sold by an ice cream vendor at your favorite beach this summer, starting on the Friday of Memorial Day weekend and ending on the Monday of Labor Day weekend. Would you expect to find a positive or negative correlation coefficient between these variables? Explain briefly.

3. Suppose that every student in this class scored 5 points lower on the second exam than on the first exam. Consider the correlation coefficient between first exam score and second exam score. What would the value of this correlation coefficient be? Explain briefly. [Hint: You might start by drawing a scatterplot of hypothetical data that fit the description.]

The following graph displays data on the age (in months) at which a child first speaks and the child’s score on an aptitude test taken later in childhood:

4. Is the value of the correlation coefficient between these variables positive or negative?

5. Suppose that the child who took 42 months to speak were removed from the analysis. Would the value of the correlation coefficient between the variables become closer to -1, 0, or 1?