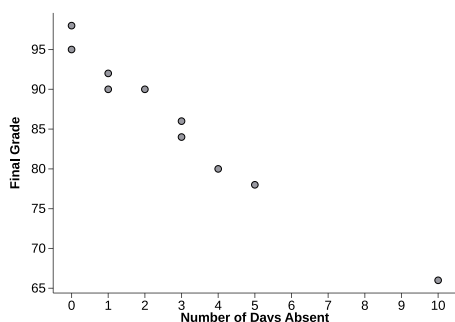


3. Dr. Metz is a professor of mathematics at a large university in Ohio. She has collected data from the professors in the math department to analyze last semester's number of students' absences and their final grade in the course. The scatterplot is shown.



Describe the direction of the relationship.

4. A random sample of students from Tarheel Academy, a kindergarten through twelfth grade private school in North Carolina, was selected and their height (in centimeters) and age (in years) were recorded. This information is in the table shown.

Age (years)	5	6	6	8	9	9	10	12	15	15	16	18
Height (cm)	114	120	116	122	130	139	138	145	163	167	179	181

- Identify the explanatory variable and the response variable.
- If the data were to be displayed in a scatterplot, what scale would be an appropriate for the horizontal axis?
- What scale would be an appropriate for the vertical axis?

5. According to a recent article from a business magazine, “Employees who stay in companies longer than 2 years can expect an annual salary increase based on the number of years loyal to that company”. The table shows the number of years of employment and the current annual salary for a random sample of employees in comparable jobs at a large company.

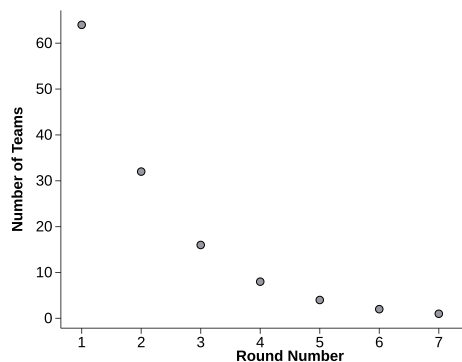
Number of years of employment	10	6	9	15	4	10	18	11
Current annual salary (in thousands of dollars)	97.3	88.7	94.2	121.8	85.3	100.5	124.7	100.8

a. Create a scatterplot for these data.

b. Describe the relationship between number of years of employment and current annual salary.

6. The NCAA Division 1 Men’s Basketball Tournament ("March Madness") has been played since 1939. Once the teams are selected for this tournament, the first round of play begins with 64 teams going head-to-head in a single elimination format, meaning that half of the teams are eliminated each round.

Based on the scatterplot, describe the relationship between the number of teams left in the tournament and the round number.



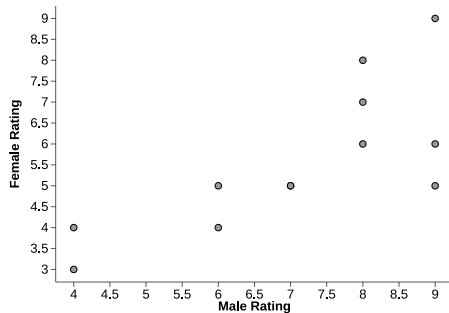
7. For their final project in AP Statistics, Janae and Roderick collected data from 73 of their schoolmates. Two of the questions on their survey asked, “What is your grade level?” and “Do you own a pet?”. The table shows the responses categorized by grade level and whether the schoolmate owns a pet.

	Yes	No
Freshman	12	5
Sophomore	10	13
Junior	6	5
Senior	15	7

Which of the following graphs is most appropriate to display the relationship between grade level and pet ownership?

- A) A scatterplot
- B) A boxplot
- C) A segmented bar graph
- D) A back-to-back stemplot

8. An advertising firm is interested in how men and women perceive a specific commercial for a new energy drink. The firm shows 12 male/female married couples the commercial and asks each married couple to separately rate the commercial on a scale of 1 (not interested in purchasing the energy drink) to 10 (would purchase the energy drink immediately). The scatterplot shows the results with each individual data point representing one married couple.



Which of the following statements is justified by the scatterplot?

- A) In general, the wives and husbands rated similarly, but the husbands tended to rate slightly higher than the wives.
- B) In general, the wives and husbands rated similarly, but the husbands tended to rate slightly lower than the wives.
- C) The couples that the wives gave a low rating tended to be the couples that the husbands gave a high rating.
- D) The couples that the wives gave a high rating tended to be the couples that the husbands gave a low rating.