

NAME:

Key

Statistics and Probability

Set 1: Data and Relationships

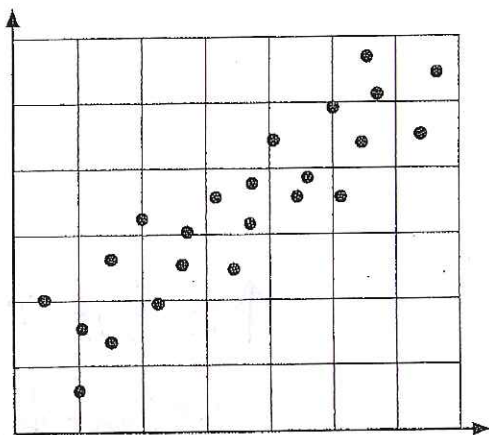
Station 1

Work with your group to answer the following questions about scatter plots.

1. Anastasia earns high scores on her vocabulary quizzes because she studies a lot! Anastasia's teacher made a list of the most recent quiz scores of 30 of her students. Then she asked each student how many minutes he or she studied for the quiz. She made a scatter plot with the data. What do you think the scatter plot might have shown? Explain.

The more the student studied, the better the quiz score. (vice versa). The less the student studied the worse the quiz score.

2. Examine the scatter plot below. What type of relationship do you see between the two sets of data?



A positive correlation

The \uparrow study, \uparrow quiz score.

The \downarrow study, \downarrow quiz score.

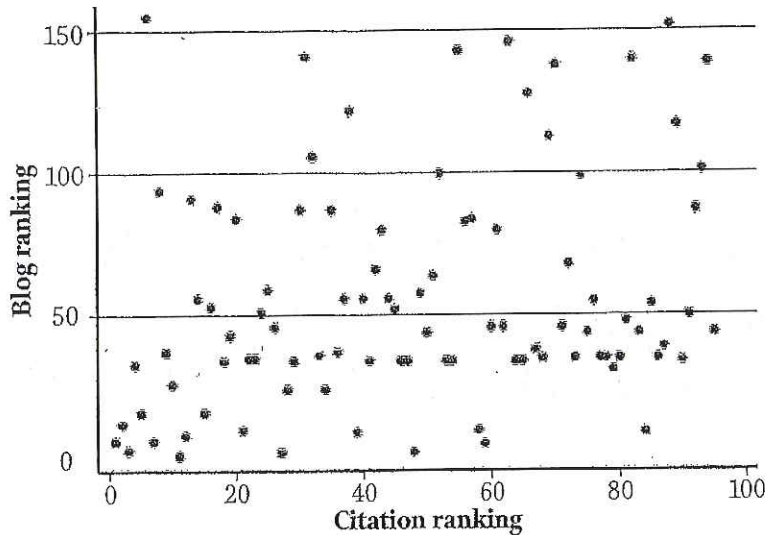
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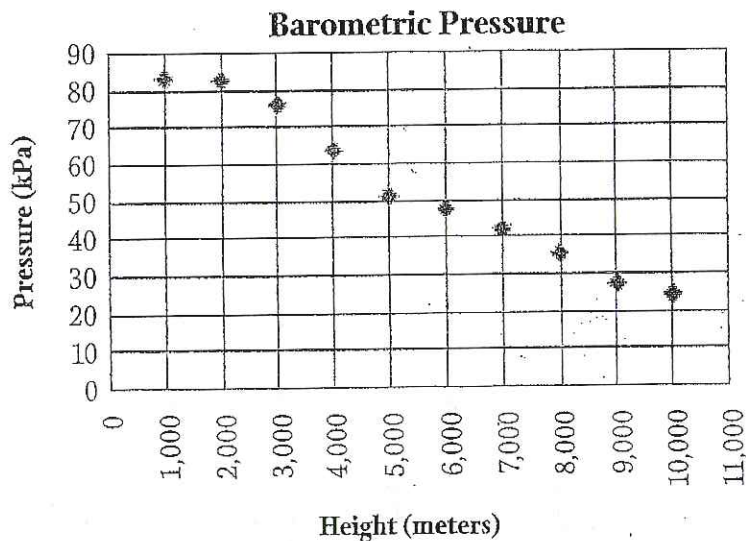
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3. The scatter plot below shows the relationship between two different rankings for blogs. It shows how a number of blogs were rated in each system. How would you describe the relationship?



There is no relationship. The points are too scattered all over. There is no trend.

4. Which of the following statements describes the relationship shown in the scatter plot? Circle the letter of the best answer.



Height ↑, Pressure ↓
Height ↓, Pressure ↑

- a. As the height decreases, the pressure increases.
 b. As the height decreases, the pressure decreases.
 c. As the height increases, the pressure increases.

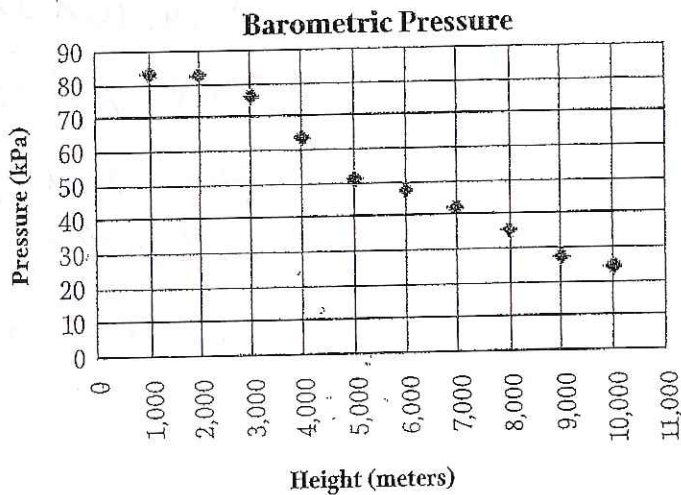
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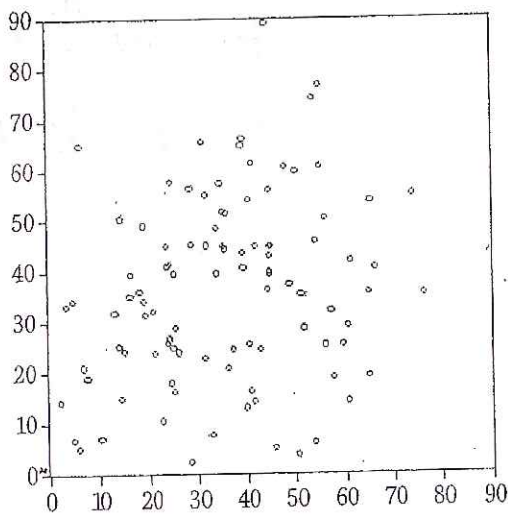
Work with your group to answer the following questions about scatter plots.

5. Examine the scatter plot below.



- a. What pressure would you expect at a height of 7,500 meters? ≈ 40 kPa
- b. At what height would you expect a pressure of 10 kPa? $\approx 11,000$ m

6. Examine the scatter plot below. The x-axis shows the number of dollars each man spent at the mall on Saturday. The y-axis shows the number of e-mails each man sent last week.



- a. What relationship do you see in the scatter plot? there is no relationship
- b. Are you surprised by the results of the scatter plot? Explain.

No, the number of emails sent does not depend on the amount of money they spent at the mall.

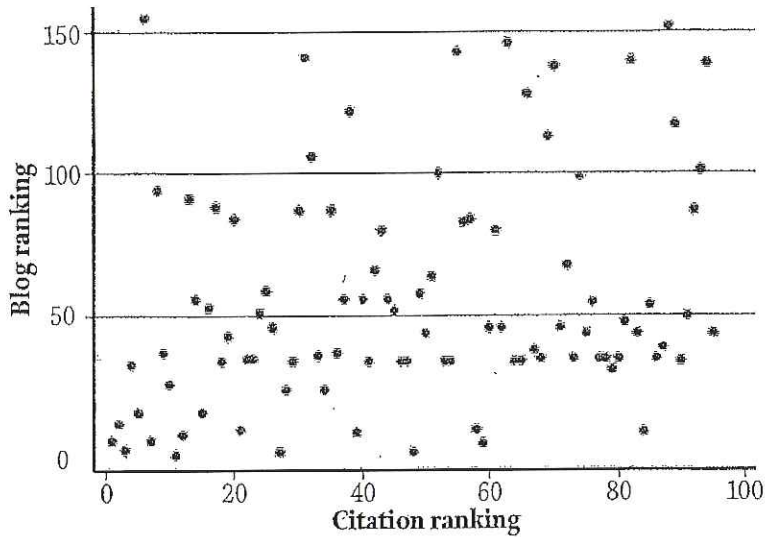
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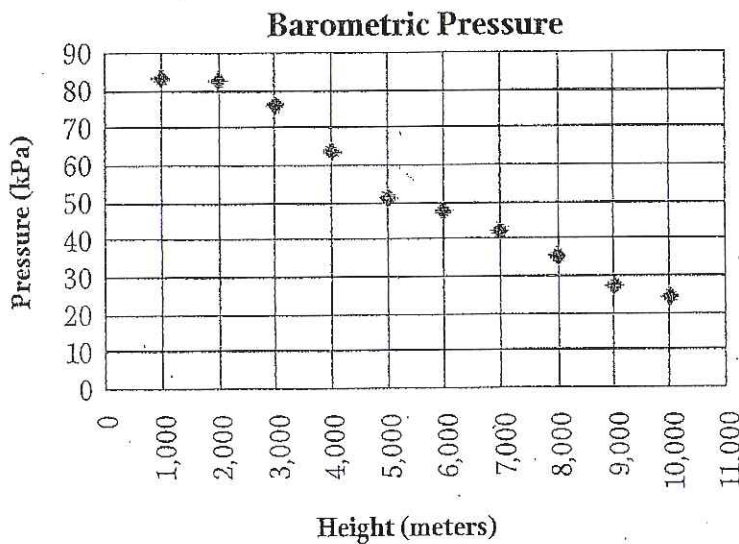
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7. The scatter plot below shows the relationship between two different rankings for blogs. It shows how a number of blogs were rated in each system. How would you describe the relationship?



There is no relationship. The points are too scattered all over. There is no trend.

8. Which of the following statements describes the relationship shown in the scatter plot? Circle the letter of the best answer.



Height ↑, Pressure ↓
Height ↓, Pressure ↑

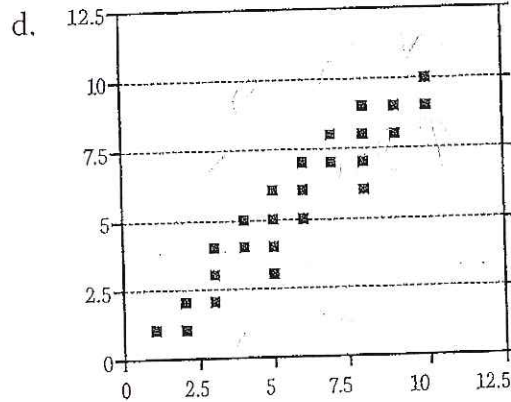
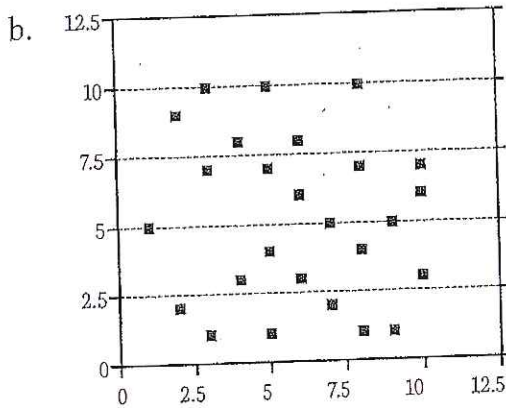
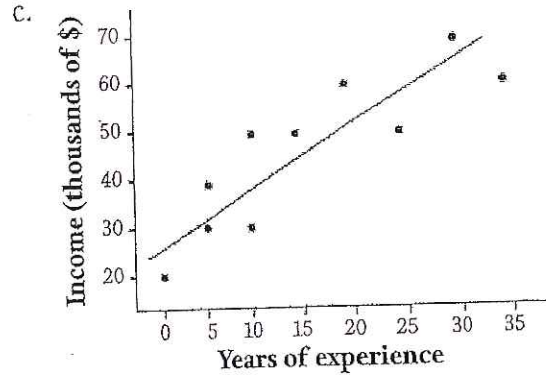
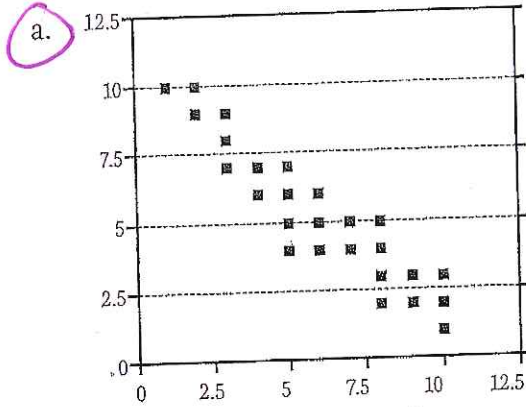
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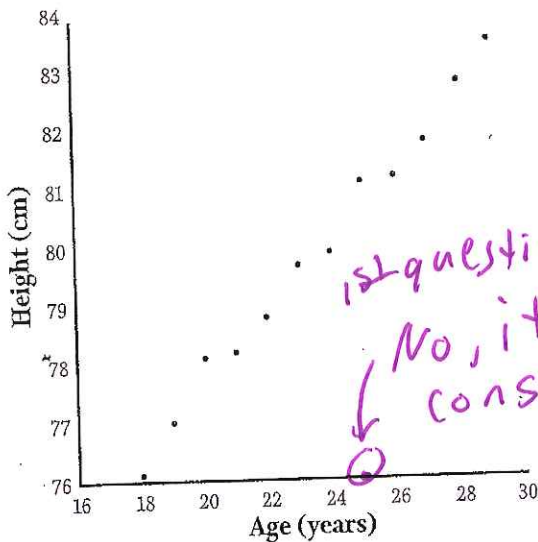
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9. Which scatter plot(s) below show(s) a negative correlation between the two sets of data? Circle the letter(s) of the best answer(s).



10. The scatter plot below shows the age and height of a sample of individuals. If you added a mark for a 25-year-old who is 76 cm tall, would that fit the relationship exhibited in the scatter plot? What relationship does the scatter plot show? Explain.



→ The relationship shows a positive trend. The older the person, the taller they get (vice versa) the younger the person, the shorter.

1st question

↓ No, it would not. This would be considered an outlier.

