LESSON MAKER PRO

Patterns in Points

Read trends, rates, clusters, and gaps in scatter plots.

HIGH SCHOOL · GDA.DSP.D

GDA.DSP.D "Scatter plots, including plots over time, can reveal patterns, trends, clusters, and gaps that are useful in analyzing the association between two contextual variables."

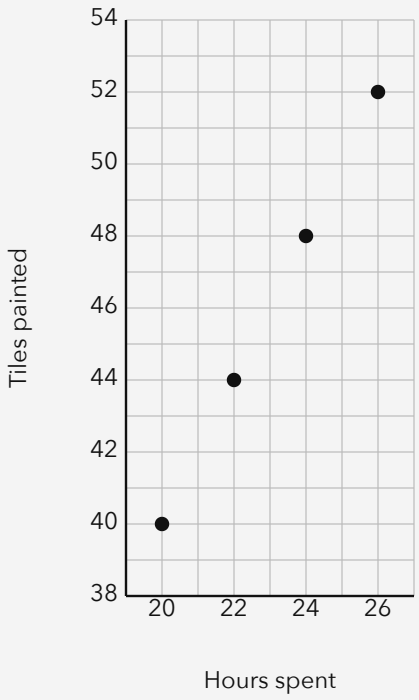
NAME _____ DATE _____

READ THE PATTERN

Each point in a scatter plot pairs two measurements. Points that generally rise from left to right show a positive association, while points that generally fall show a negative association. To find a rate between two points, divide the change in the vertical value by the change in the horizontal value, but check for clusters or gaps before describing the whole plot.

WORKED EXAMPLE

The plot shows hours spent painting a mural and the total number of tiles painted. Between the first and last points, how many additional tiles were painted per additional hour?

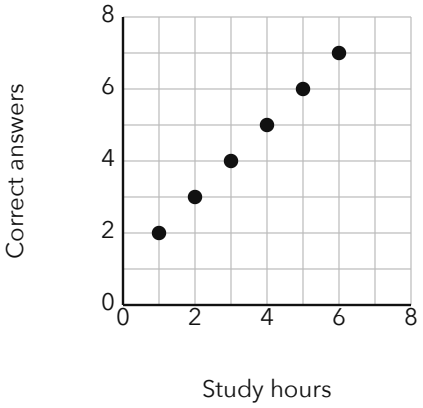


1. Read the first and last points: (20, 40) and (26, 52).
2. Find the changes: 52 - 40 = 12 tiles and 26 - 20 = 6 hours.
3. Divide: 12/6 = 2 tiles per hour.

Answer: 2 additional tiles per additional hour

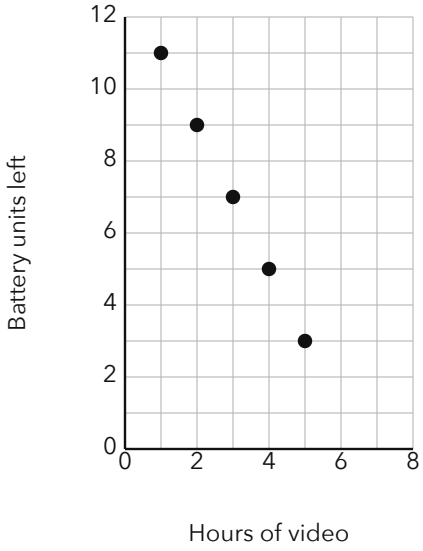
PRACTICE Problems 1–2

1 Use the points at 2 and 6 study hours. What is the change in correct answers per additional study hour?



ANSWER _____

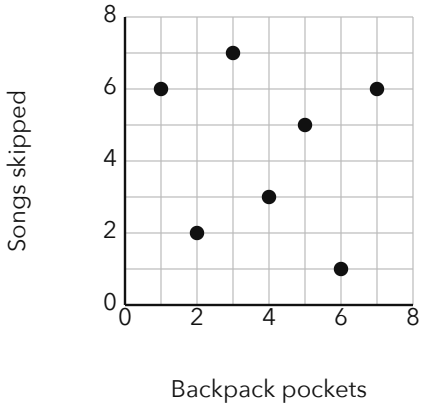
2 From hour 1 to hour 5, how many battery units does the remaining battery drop per hour?



ANSWER _____

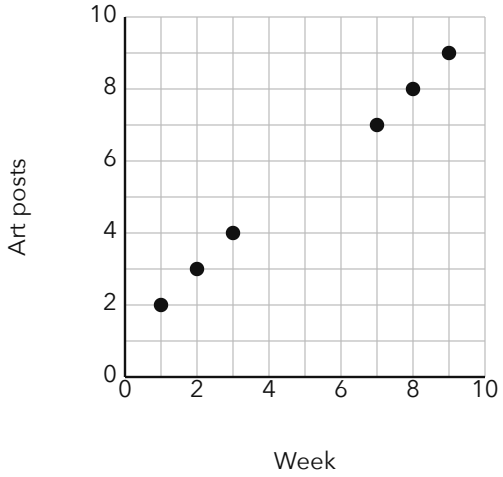
PRACTICE Problems 3–4

3 Does the plot show a clear positive association, a clear negative association, or no clear association?



ANSWER _____

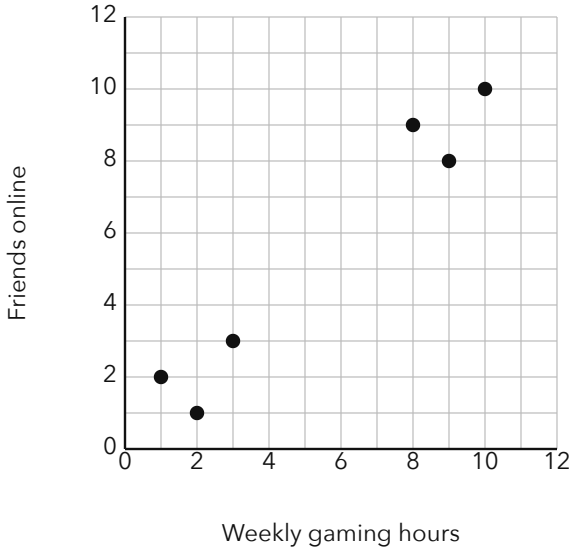
4 Which weeks have no plotted data between the two groups of points?



ANSWER _____

PRACTICE Problems 5–6

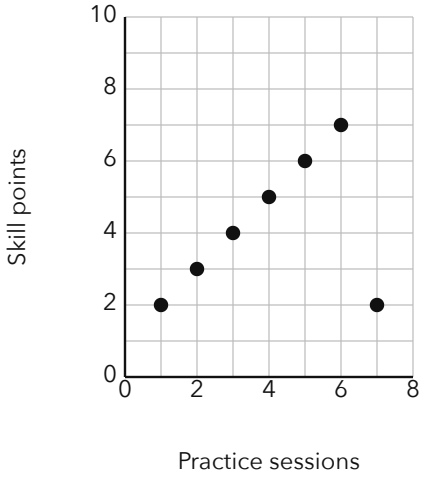
5 Around which two integer-coordinate pairs are the clusters centered?



ANSWER _____

_____

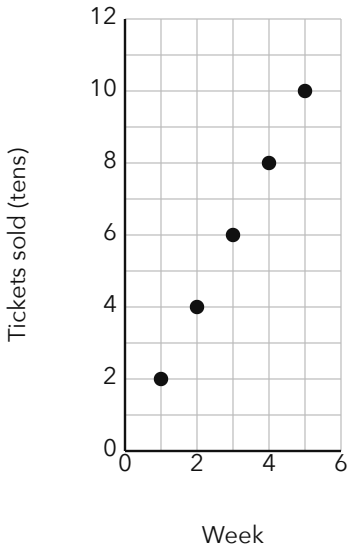
6 Which plotted point breaks the overall upward pattern? Give its coordinates.



ANSWER _____

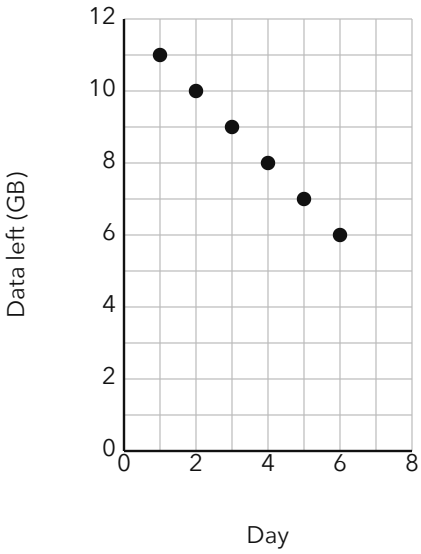
APPLY IT Show your work

1 A student group tracks total concert tickets sold. Each unit on the vertical axis represents 10 tickets. How many more tickets had been sold by week 5 than by week 2?



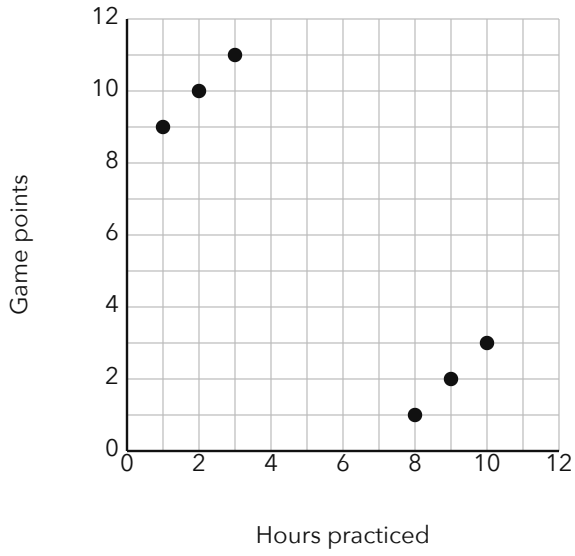
ANSWER _____

2 A student checks how much mobile data remains in a phone plan. Between days 2 and 6, at what rate does the data remaining fall?



ANSWER _____

CHALLENGE One step up



Look at all six points, then look at each cluster separately. Is the overall association the same as the association within each cluster? Explain both trends.

WORK SPACE AND ANSWER

ANSWER KEY # Patterns in Points

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use the points at 2 and 6 study hours. What is the change in correct answers per additional study hour?	**1 additional correct answer per additional study hour**
2	From hour 1 to hour 5, how many battery units does the remaining battery drop per hour?	**2 battery units per hour**
3	Does the plot show a clear positive association, a clear negative association, or no clear association?	**No clear association**
4	Which weeks have no plotted data between the two groups of points?	**Weeks 4, 5, and 6**
5	Around which two integer-coordinate pairs are the clusters centered?	**(2, 2) and (9, 9)**
6	Which plotted point breaks the overall upward pattern? Give its coordinates.	**(7, 2)**

PART 2 · APPLY IT

1. **60 more tickets** The plot shows 4 tens of tickets at week 2 and 10 tens at week 5. The difference is 6 tens, or 60 tickets.
2. **1 GB per day** Data remaining falls from 10 GB to 6 GB over 4 days. Divide the 4 GB drop by 4 days.

CHALLENGE

No. Across all six points, the association is negative because the points with more practice hours have fewer game points. Within each cluster, the association is positive because game points rise as practice hours rise.

For rate questions, accept an equivalent signed rate if the direction is clear. For the challenge, accept explanations that distinguish the negative overall association from the positive association within each cluster.