LESSON MAKER PRO

Scatter Plot Detectives

Plot data, then describe its pattern.

GRADE 8 · 8.SP.A.1

CCSS.Math.Content.8.SP.A.1 "Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association..."

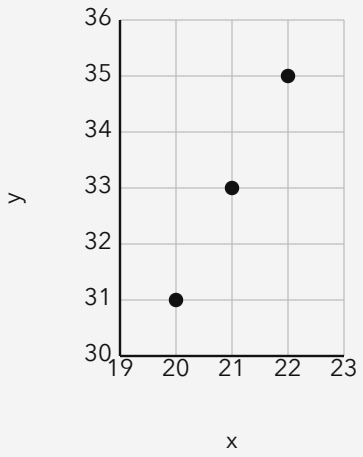
NAME _____ DATE _____

SPOT THE PATTERN

A scatter plot uses ordered pairs to show two quantities. Points that rise from left to right have a positive association, and points that fall have a negative association. Look for lines, curves, clusters, and points far from the rest.

WORKED EXAMPLE

Plot (20,31), (21,33), and (22,35). Describe the association.

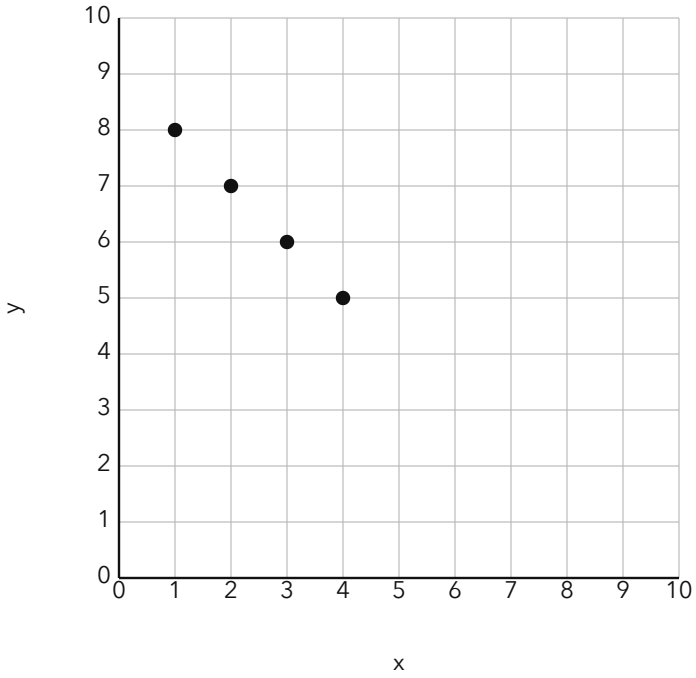


1. Read the completed plot: each dot is one data pair, with x on the horizontal axis and y on the vertical axis.
2. As x increases by 1, y increases by 2.
3. The points make an upward straight-line pattern.

Answer: positive linear association

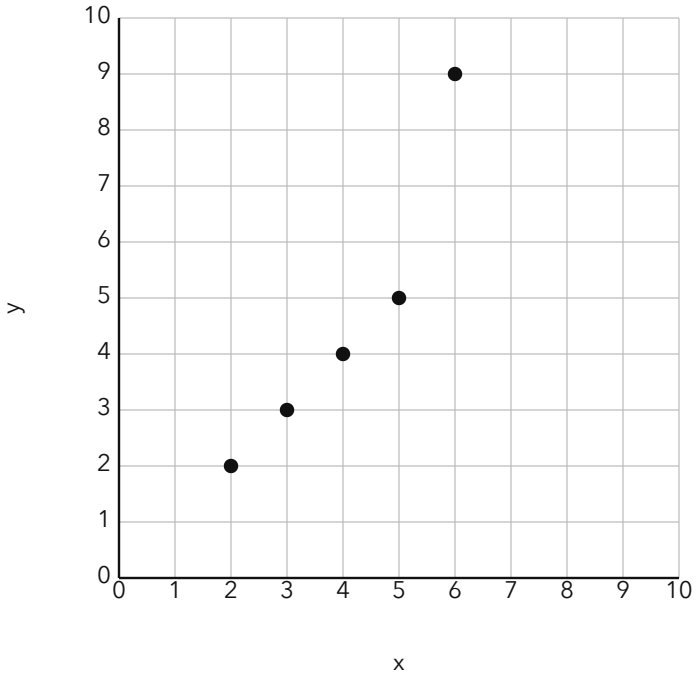
PRACTICE 5 problems

1 The points are (1,8), (2,7), (3,6), and (4,5). What type of association is shown?



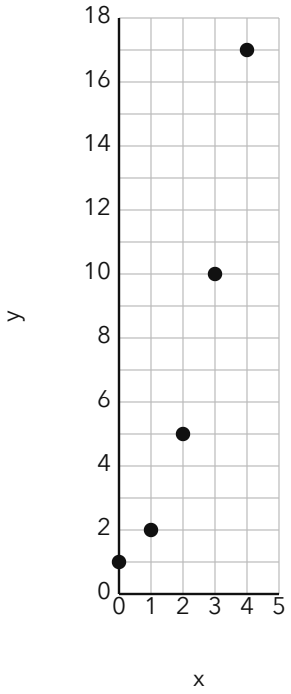
ANSWER _____

2 The points are (2,2), (3,3), (4,4), (5,5), and (6,9). Which point is an outlier?



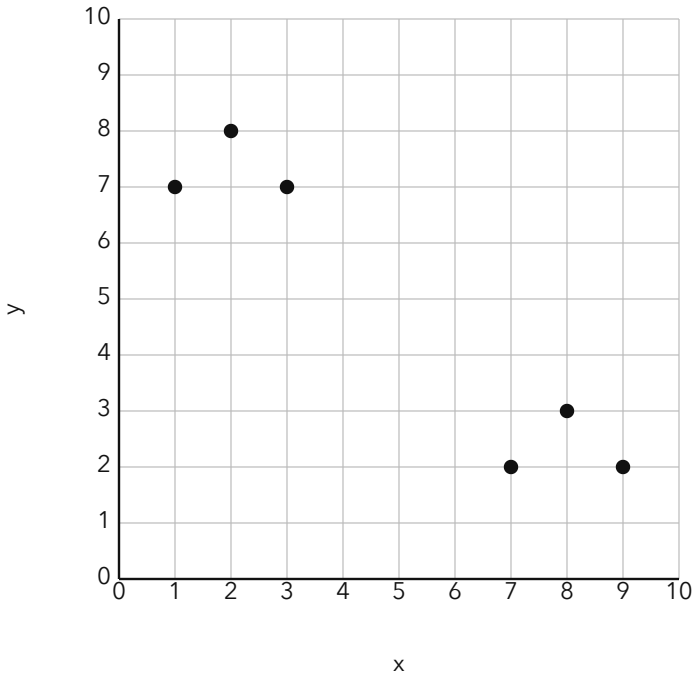
ANSWER _____

3 The points are (0,1), (1,2), (2,5), (3,10), and (4,17). Describe the pattern.



ANSWER _____

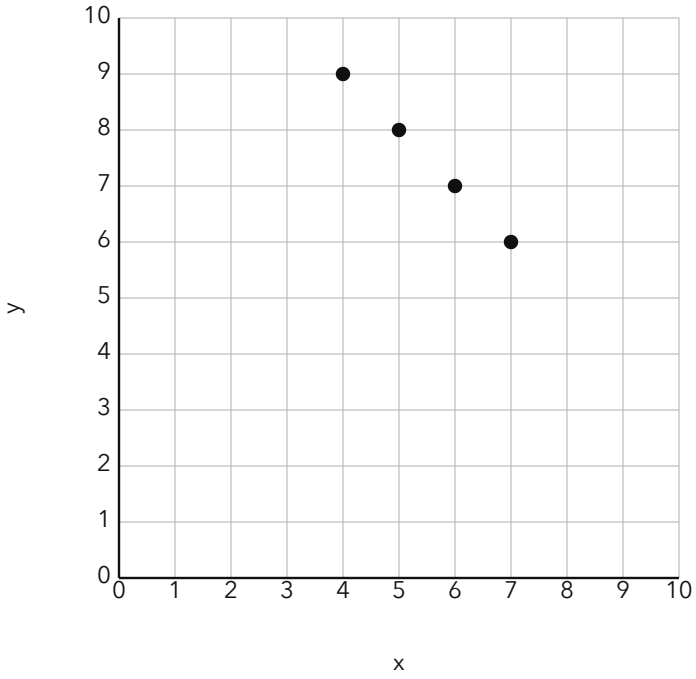
4 The points are (1,7), (2,8), (3,7), (7,2), (8,3), and (9,2). Describe the clusters.



ANSWER _____

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5 The points are (4,9), (5,8), (6,7), and (7,6). Name the association and tell what happens to y as x increases.

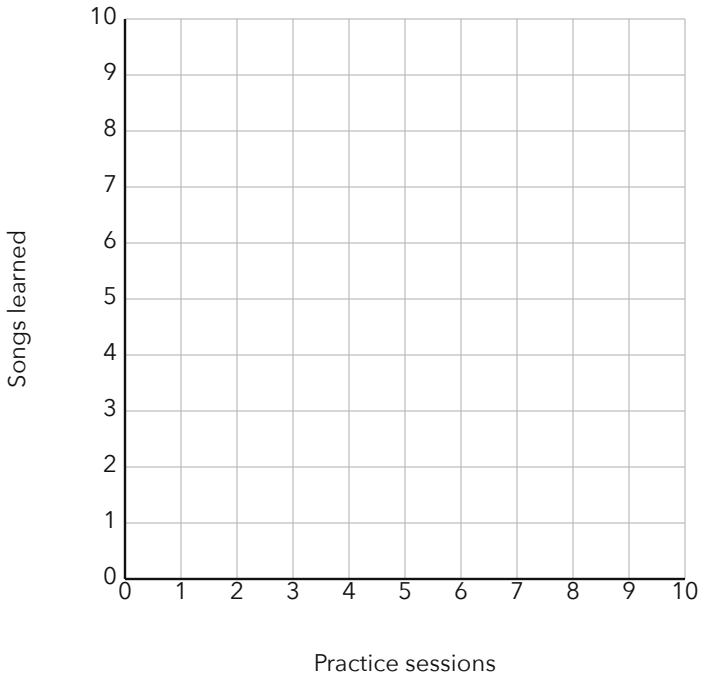


ANSWER _____

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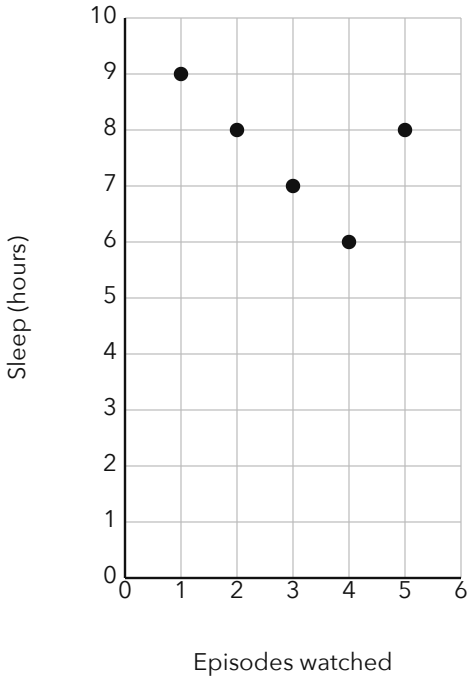
APPLY IT Show your work

1 Jordan records guitar practice sessions each week, x, and new songs learned, y: (1,2), (2,3), (3,5), (4,6), (5,8). Plot the points. Label x as practice sessions and y as songs learned. Describe the association.



ANSWER _____

2 Maya records episodes watched on school nights, x, and hours of sleep, y: (1,9), (2,8), (3,7), (4,6), (5,8). Which point is an outlier? Describe the association of the other points.



ANSWER _____

CHALLENGE One step up

A scatter plot has points (1,9), (2,8), (3,9), (7,3), (8,2), and (9,3). Give a complete description that names the overall association and the clusters.

WORK SPACE AND ANSWER

ANSWER KEY # Scatter Plot Detectives

GRADE 8 · 8.SP.A.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The points are (1,8), (2,7), (3,6), and (4,5). What type of association is shown?	**negative linear association**
2	The points are (2,2), (3,3), (4,4), (5,5), and (6,9). Which point is an outlier?	**(6,9)**
3	The points are (0,1), (1,2), (2,5), (3,10), and (4,17). Describe the pattern.	**positive nonlinear association**
4	The points are (1,7), (2,8), (3,7), (7,2), (8,3), and (9,2). Describe the clusters.	**Two clusters: one near x = 1 to 3 and y = 7 to 8, and one near x = 7 to 9 and y = 2 to 3.**
5	The points are (4,9), (5,8), (6,7), and (7,6). Name the association and tell what happens to y as x increases.	**negative linear association; y decreases as x increases**

PART 2 · APPLY IT

1. **Plot (1,2), (2,3), (3,5), (4,6), and (5,8). The data show a positive linear association.** The points rise from left to right and stay near an upward line.
2. **(5,8) is the outlier. The other points show a negative linear association.** The first four points fall in a straight-line pattern. The point (5,8) is far above that pattern.

CHALLENGE

The overall association is negative. There are two clusters: one near x = 1 to 3 and y = 8 to 9, and one near x = 7 to 9 and y = 2 to 3.

Accept equivalent descriptions such as upward or downward linear pattern. For cluster locations, accept reasonable approximate ranges that identify both groups. Check one correctly placed dot for each data pair, labeled axes and equal tick spacing. Do not join the data points. Association does not prove that practice alone causes the result.

Scatter Plot Detectives

Apply 1: completed scatter plot; positive approximately linear association

