LESSON MAKER PRO

Trend Tracker

Find patterns and make predictions from paired data.

GRADE 8 · 8.SP.A

CCSS.Math.Content.8.SP.A "Investigate patterns of association in bivariate data."

NAME _____ DATE _____

SPOT THE TREND

Bivariate data pairs two variables. When values of both variables tend to rise together, the association is positive. When one tends to rise as the other falls, it is negative. A line of fit can be used to estimate a missing value.

WORKED EXAMPLE

A line of fit is $y = 9x + 14$. Estimate y when $x = 8$.

1. Substitute 8 for x.
2. $y = 9(8) + 14$
3. $y = 72 + 14 = 86$

Answer: 86

PRACTICE 5 problems

1 The points (1, 10), (3, 15), and (5, 20) are on a scatter plot. Is the association positive, negative, or no association?

ANSWER _____

2 The points (1, 19), (3, 15), and (5, 11) are on a scatter plot. Is the association positive, negative, or no association?

ANSWER _____

3 A line of fit is $y = 2x + 5$. Estimate y when $x = 7$.

ANSWER _____

4 A data point has $x = 5$ and $y = 22$. A line of fit is $y = 4x + 1$. Find the predicted y and the residual, actual minus predicted.

ANSWER _____

5 As the number of absences increases, quiz scores tend to decrease. Name the association.

ANSWER _____

APPLY IT Show your work

1 A student tracks practice days for a new song and the number of sections played correctly. The pairs are (1, 1), (3, 3), and (5, 5). Describe the association. Then predict the number of sections played correctly after 7 practice days.

WORK SPACE

ANSWER _____

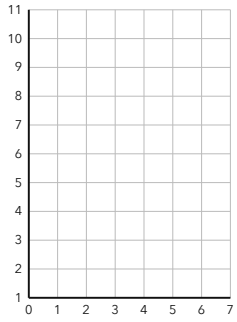
2 A student's free phone storage is modeled by y = 28 - 3x, where x is the number of offline videos saved and y is free storage in gigabytes. Name the association and find y when x = 7.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Plot the points (1, 2), (3, 4), (4, 5), (5, 11), and (6, 7). Which point is an outlier? Explain by giving the y-value you would expect when x = 5 based on the other points.



WORK SPACE AND ANSWER

ANSWER KEY

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GRADE 8 · 8.SP.A

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The points (1, 10), (3, 15), and (5, 20) are on a scatter plot. Is the association positive, negative, or no association?	**positive association**
2	The points (1, 19), (3, 15), and (5, 11) are on a scatter plot. Is the association positive, negative, or no association?	**negative association**
3	A line of fit is y = 2x + 5. Estimate y when x = 7.	**19**
4	A data point has x = 5 and y = 22. A line of fit is y = 4x + 1. Find the predicted y and the residual, actual minus predicted.	**Predicted y = 21; residual = 1**
5	As the number of absences increases, quiz scores tend to decrease. Name the association.	**negative association**

PART 2 · APPLY IT

1. **positive association; 7 sections** The pairs follow y = x, so both variables increase together. At 7 practice days, the estimate is 7 sections.
2. **negative association; 7 gigabytes** The coefficient of x is negative, so free storage decreases as videos saved increases. Substitute 7: y = 28 - 3(7) = 7.

CHALLENGE

The outlier is (5, 11). The other points follow y = x + 1, so when x = 5, the expected y-value is 6.

Accept equivalent wording for positive and negative association. For residuals, accept "actual minus predicted" and a positive residual of 1.