

Scatter Plot Signals

Spot direction, strength, and unusual points.

GRADE 8 • MA.8.DP.1.2

MA.8.DP.1.2 "Given a scatter plot within a real-world context, describe patterns of association."

NAME _____

DATE _____

READ THE PATTERN

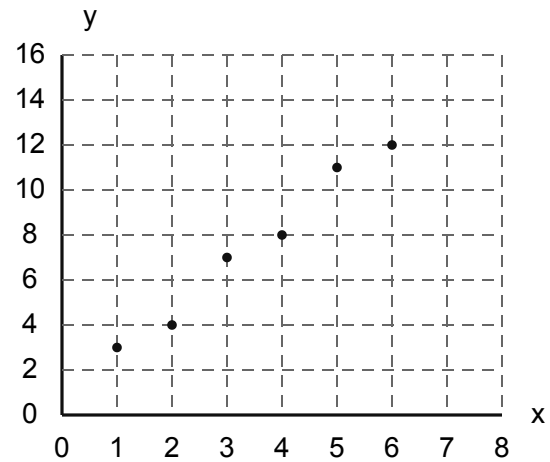
Read the plotted pairs, not just the axis values. Describe direction (positive, negative or no clear direction), form (linear or curved), strength, and points far from the main pattern. A strong association stays close to a line or curve. A weaker one is more scattered. These are illustrative data sets; association alone does not prove cause.

WORKED EXAMPLE

A class plots plant age x in weeks and height y in centimeters. Describe the pattern.

1. As age increases, height tends to increase.
2. The points lie close to a straight rising trend.
3. No point is far away from the pattern.

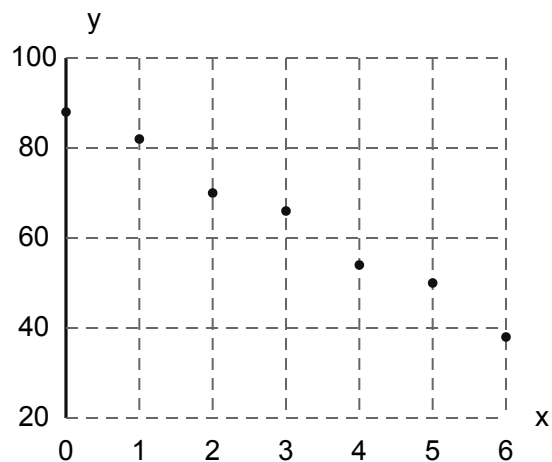
Answer: Strong positive, approximately linear association; no clear outlier.



PRACTICE 4 problems

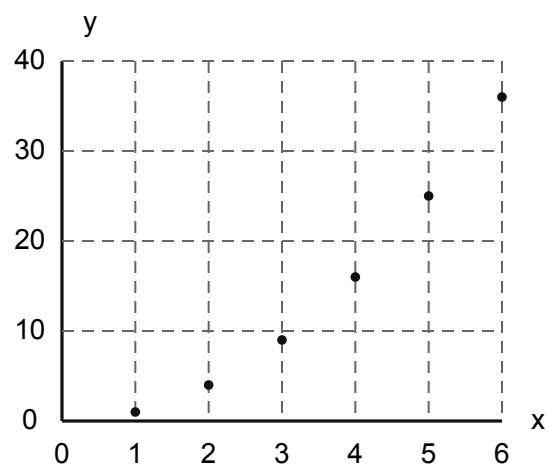
- 1** A drink cools. The plot shows elapsed time x in minutes and temperature y in $^{\circ}\text{C}$. Describe direction, form and strength.

ANSWER _____



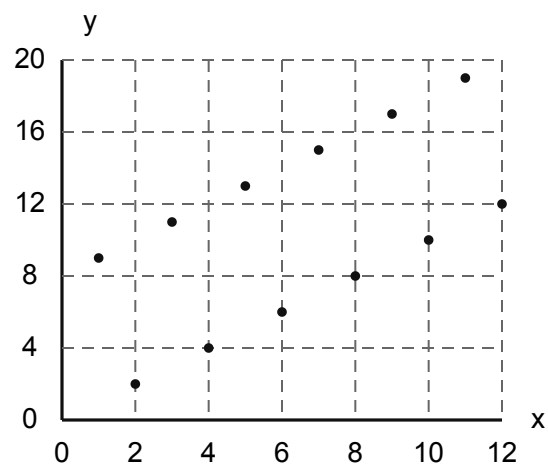
- 2** Square garden beds have side length x in meters and area y in square meters. Describe the association. Is its form linear?

ANSWER _____



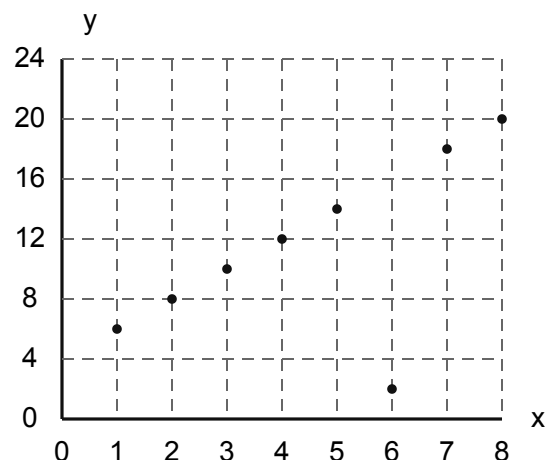
- 3** The plot shows practice hours x and skill points y . Describe the direction and compare the strength with the worked example.

ANSWER _____



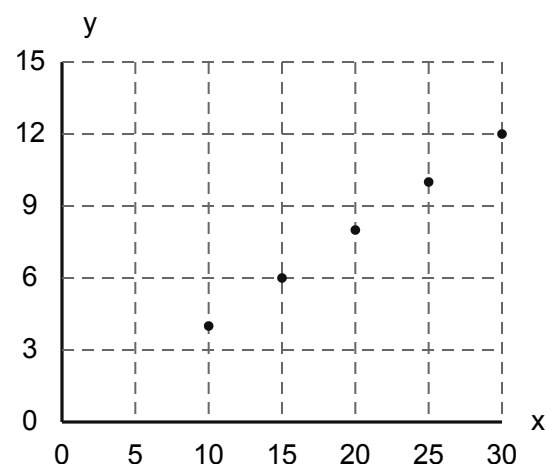
- 4 The plot compares weeks of a training program x and completed laps y . Describe the main pattern and identify a possible outlier.

ANSWER _____



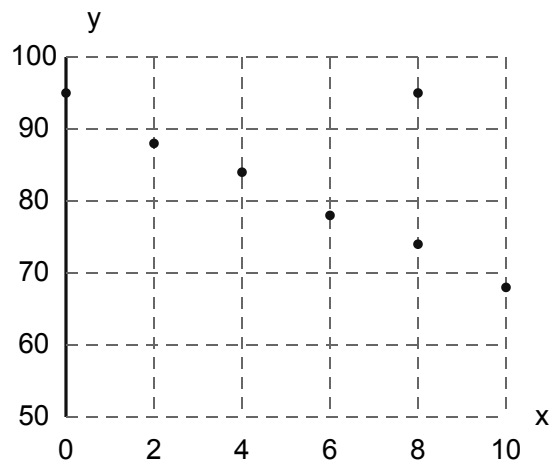
APPLY IT Show your work

- 1 A basketball player records shots attempted x and shots made y . Describe the plotted association in context. Does this alone prove that attempting more shots improves shooting accuracy?



2

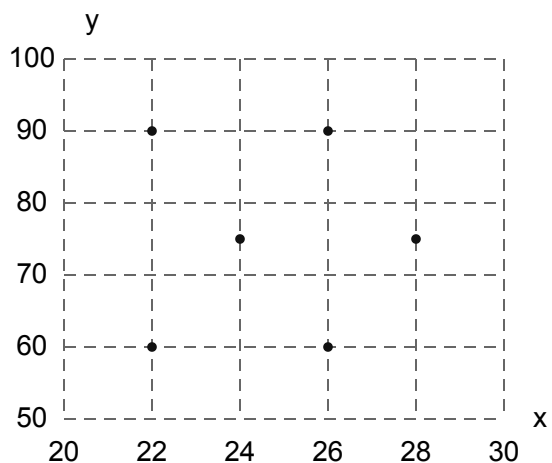
The plot shows phone notifications x during study time and quiz score y . Describe the main association and identify the point that does not follow it.



CHALLENGE One step up

The plot shows shoe length x in centimeters and quiz score y . Describe the association. Would a rising or falling straight line give a convincing summary? Explain.

WORK SPACE AND ANSWER



Judge strength relative to the spread around the main trend, not simply whether a correlation is positive. The practice-hours plot is weaker than the worked example; accept weak/moderate positive descriptions with evidence. Nonlinear can still be strong. Outlier descriptions should reference the main pattern. Do not infer causation from these sample data.

PRACTICE 1

Strong negative, approximately linear association: temperature decreases with time.

PRACTICE 2

Strong positive nonlinear association. Area rises in a curve, increasingly steeply.

PRACTICE 3

Positive and roughly linear, but weaker than the worked example because points are much more spread out around the trend.

PRACTICE 4

The main pattern is strong positive and linear. The point (6,2) is a possible outlier, well below that trend.

APPLY IT 1

Strong positive linear association. More attempts go with more made shots; this alone does not prove improved accuracy.

A proportional rise in made shots can occur with unchanged accuracy.

APPLY IT 2

The main trend is negative and approximately linear. The point (8,95) is a possible outlier above the trend.

Most points descend; (8,95) lies above that pattern.

CHALLENGE

No clear association. High and low scores occur at the same shoe lengths, so neither a rising nor a falling trend is convincing.