



Scatter plots

GRADE 8 MATH

Name _____

Date _____

Give both the direction and the shape whenever you describe a pattern.

WORKED EXAMPLE

One point, two measurements. Direction: positive, negative, or none. Shape: linear or non-linear — a separate question. Outliers get investigated, not deleted. Association is not causation: ask what third thing could drive both.

1. What does each point on a scatter plot represent?

FLUENCY

Show your thinking

Answer

2. Temperature against hot-chocolate sales: (2,48) (5,43) (8,37) (11,30) (14,26) (17,19) (20,14). Describe the association.

APPLICATION

Show your thinking

Answer

3. Explain the difference between a negative association and no association.

REASONING

Show your thinking

Answer

4. Why are direction and shape two separate questions? Give a pattern that is positive but not linear.

REASONING

Show your thinking

Answer

5. A scatter plot of shoe size against reading age for children aged 4 to 14 shows a strong positive association. Does bigger feet improve reading? Explain.

REASONING

Show your thinking

Answer

6. A plot of arm span against height for a class shows two separate clusters. Suggest what could cause that.

REASONING

Show your thinking

Answer

7. A researcher removes an outlier because it “spoils the pattern”. Give two reasons why that is poor practice.

REASONING

Show your thinking

Answer

8. Sketch a scatter plot showing a negative, non-linear association.

APPLICATION

Show your thinking

Answer

9. Why is it not enough to say “correlation is not causation” when explaining a misleading claim?

REASONING

Show your thinking

Answer