

Grade 8 · Scatter Plots and Association · Test

Common Core 8.SP.A.1 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This test covers standard 8.SP.A.1 with 8 questions worth 20 points. Students read and construct scatter plots, describe association, and identify clusters and outliers. Complete answers use words such as positive, negative, linear, nonlinear, cluster and outlier. Use a ruler for the graph.

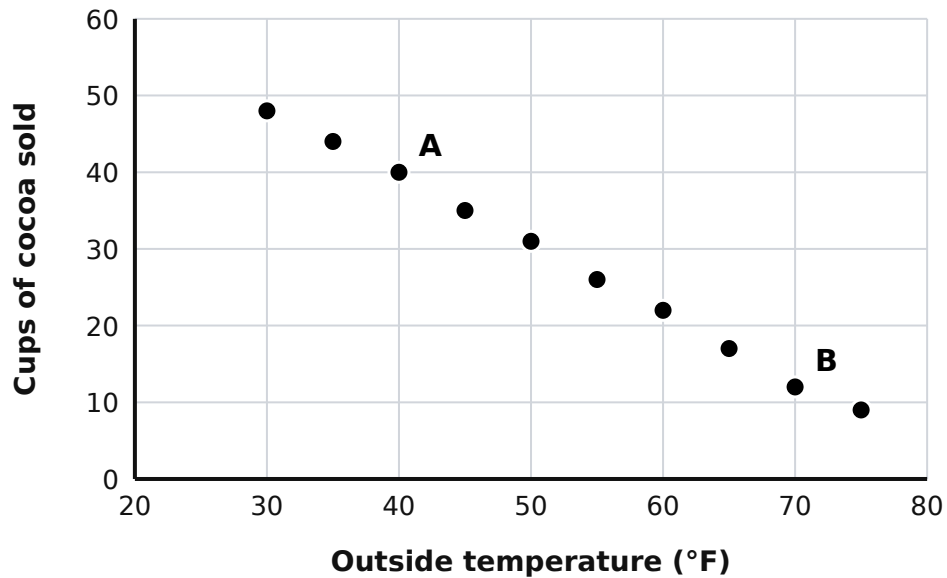
Test information

- **Grade:** Grade 8
- **Chapter:** Scatter Plots and Association
- **Common Core:** 8.SP.A.1
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 3 pts; Question 5: 4 pts; Question 6: 3 pts; Question 7: 2 pts; Question 8: 2 pts)

Question 1: Read points on a scatter plot (2 points)

The scatter plot shows temperature and cups of cocoa sold.

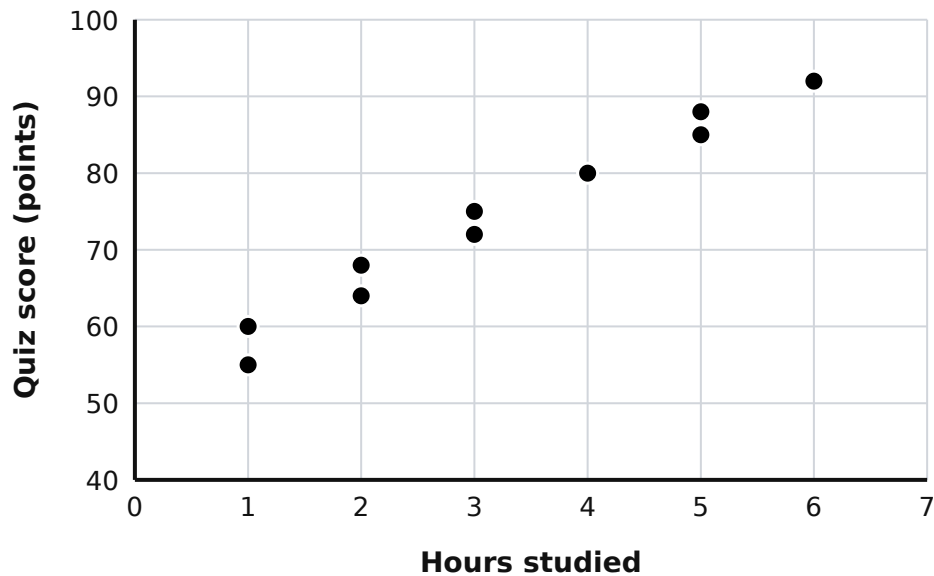
- Write the coordinates of point A. (1 point)
- Explain what point B means in this situation. (1 point)



Cocoa sales by temperature.

Question 2: Describe the association (2 points)

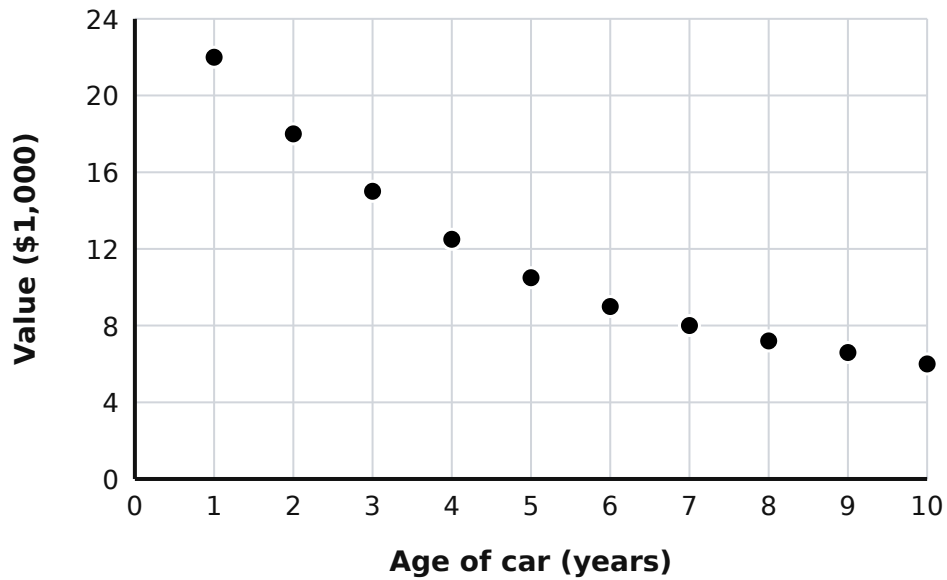
Describe the association between the variables in the scatter plot. Give the direction and tell whether it is linear or nonlinear.



Hours studied and quiz scores.

Question 3: Linear or nonlinear (2 points)

The scatter plot shows the value of a car at different ages. Is the association linear or nonlinear? Support your answer.

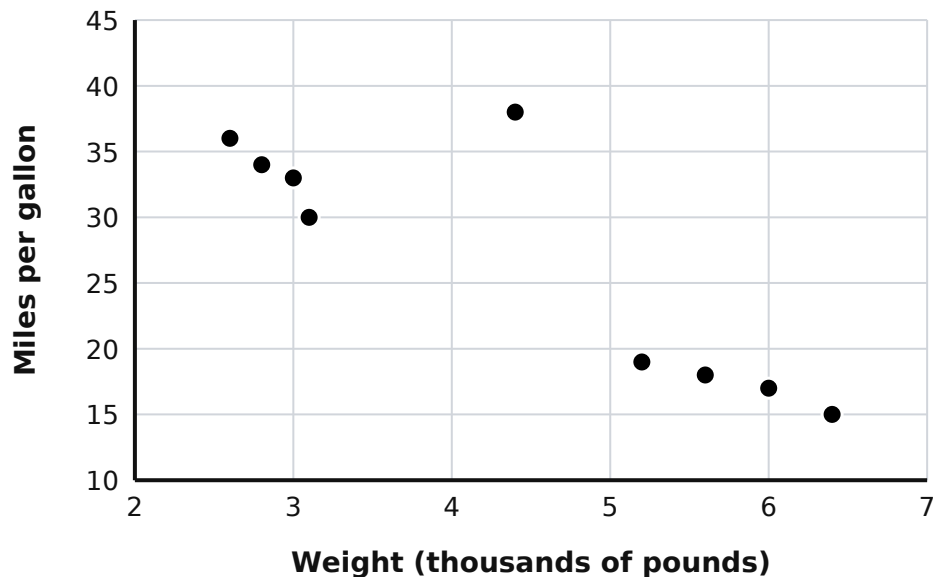


Value of a car by age.

Question 4: Clusters and outliers (3 points)

The scatter plot shows weight and gas mileage for nine vehicles.

- Identify the outlier and give its coordinates. (1 point)
- Describe the clusters. (1 point)
- Describe the overall association. (1 point)



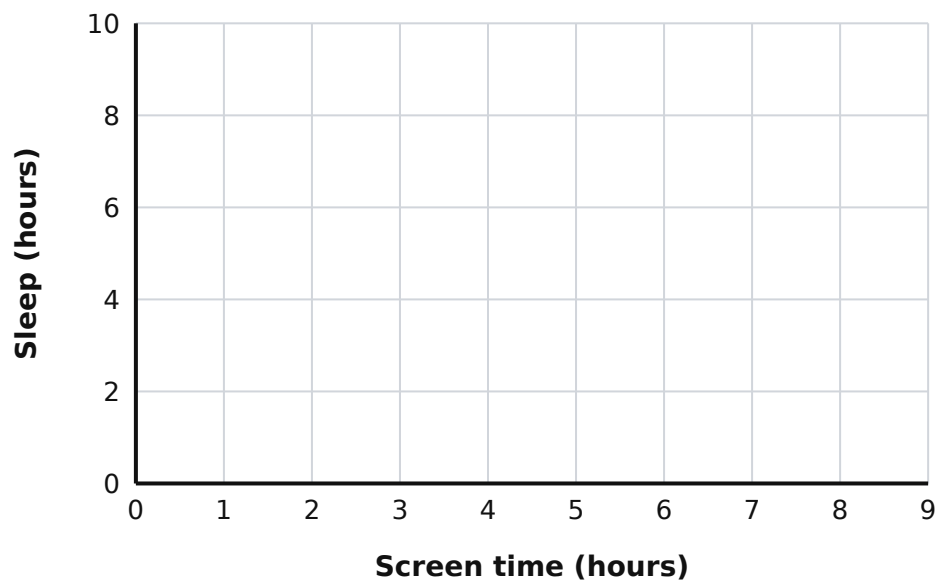
Nine vehicles.

Question 5: Construct a scatter plot (4 points)

The table shows daily screen time and nightly sleep for eight students.

Screen time (hours)	Sleep (hours)
1	9
2	9
3	8
4	8
5	7
6	6
7	6
8	5

- Plot the eight points on the grid. (2 points)
- Describe the association. (1 point)
- Explain what it means for these students. (1 point)



Grid for the screen time data.

Question 6: Classify the association (3 points)

Tell whether a scatter plot of each pair would show a positive association, a negative association, or no association.

- A person's height and arm span (1 point)
- The outside temperature and a family's heating bill (1 point)
- A student's shoe size and the number of siblings (1 point)

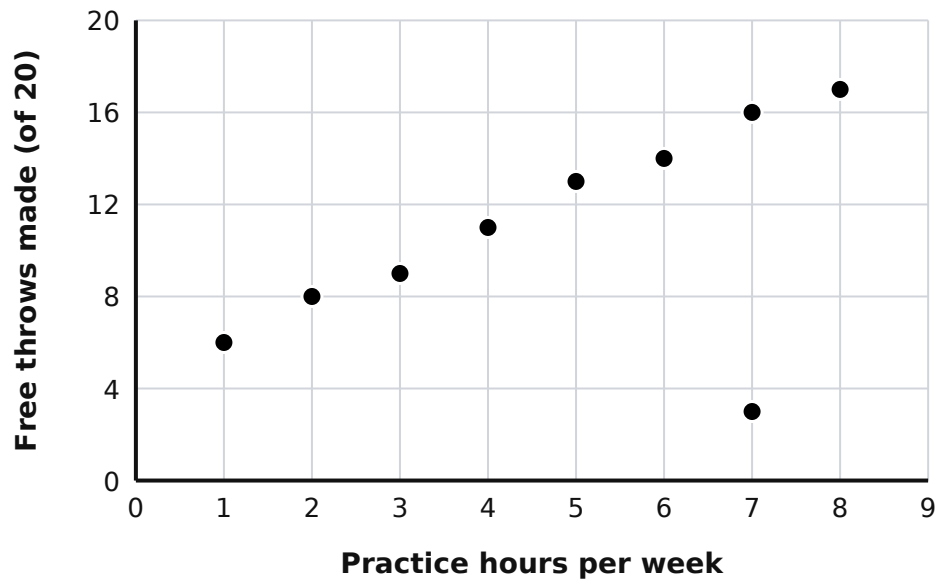
Question 7: Association and cause (2 points)

A scatter plot shows a positive association between the number of firefighters at a fire and the

damage the fire causes. Does that mean sending more firefighters causes more damage? Explain.

Question 8: Evaluate a claim about an outlier (2 points)

Sofia looked at the scatter plot and said, "There is no outlier, because every point is inside the axes." Is she correct? Explain.



Practice hours and free throws.