

Algebra 1 - Scatter Plots, Lines of Fit and Two-Way Tables - Test

Common Core S-ID.B.5, S-ID.B.6, S-ID.C.7, S-ID.C.8, S-ID.C.9 · maths-pdf.fr/en/

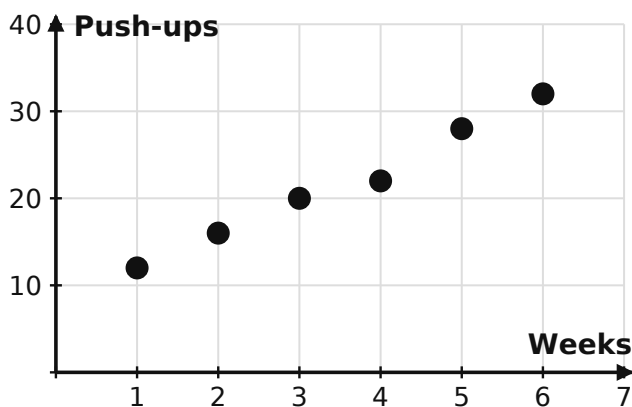
Name: _____ Class: _____ Date: ____/____/____

This 45-minute test on scatter plots, lines of fit, and two-way tables covers Common Core S-ID.B.5, S-ID.B.6, S-ID.C.7, S-ID.C.8, and S-ID.C.9 and is worth 20 points. Work alone, show all steps, and use a calculator only if your teacher allows it. Partial credit is given for correct work, so write down your reasoning even when you are unsure of the final answer.

About this test

- Grade: Algebra 1
- Chapter: Scatter Plots, Lines of Fit and Two-Way Tables
- Standards: S-ID.B.5, S-ID.B.6, S-ID.C.7, S-ID.C.8, S-ID.C.9
- Time: 45 minutes
- Total: 20 points

Question 1 - Describe the association [2 pts]



Push-ups after weeks of training.

The scatter plot shows weeks of training and push-ups completed. Describe the direction and the strength of the association.

Question 2 - Write the line of fit [2 pts]

A line of fit passes through $(1,12)$ and $(6,32)$. Write its equation in slope-intercept form.

Question 3 - Interpret the model [2 pts]

In $y = 4x + 8$, x is the number of weeks of training and y is the number of push-ups. Interpret the slope and the y-intercept.

Question 4 - Predict and find a residual [2 pts]

Use $y = 4x + 8$ to predict the push-ups after 3 weeks. A student actually did 23. Find the residual.

Question 5 - Correlation coefficient [2 pts]

Describe each correlation coefficient: (a) $r = -0.88$ (b) $r = 0.2$.

Question 6 - Causation [2 pts]

Data show that cities with more fire trucks have more fire damage. Does this mean fire trucks cause more damage? Explain.

Question 7 - Two-way table [3 pts]

	Grade 6	Grade 7	Total
Pizza	30	20	50
Tacos	10	40	50
Total	40	60	100

Lunch preference by grade.

One hundred students chose pizza or tacos for lunch.

- a. Find the joint relative frequency of grade 7 students who chose tacos. (1 point)

- b. Find the marginal relative frequency of students who chose pizza. (1 point)
- c. Among grade 6 students, what percent chose pizza? (1 point)

Question 8 - Residuals [3 pts]

x	1	2	3
actual y	4	4	9

Data for question 8.

The line of fit for the data $(1,4),(2,4),(3,9)$ is $y = 2x + 1$.

- a. Find the predicted value for each point. (1 point)
- b. Find each residual. (1 point)
- c. Which point is farthest from the line? (1 point)

Question 9 - Extrapolation [2 pts]

A line of fit $y = 0.5x + 10$ was found from data with x between 20 and 60. Is it reasonable to predict at $x = 40$? At $x = 200$? Explain.