SCATTER PLOT PROJECT

For this assignment, you will gather data from your classmates to create three different scatter plots. You should pick variables for each graph that will likely result in one scatter plot with a positive correlation, one with a negative correlation, and one with no correlation.

STEP 1: PICK YOUR VARIABLES.

Each of your three scatter plots should have different variables. Make sure that you are picking something that can be measured with numbers (age in months, height in inches, number of siblings, number of letters in a name, etc).

STEP 2: ANSWER QUESTIONS.

Answer the questions on the front of the question sheet – explain why you expect each scatter plot to have the kind of correlation you selected.

STEP 3: GATHER YOUR DATA.

Ask your classmates to provide data for your three scatter plots, and record their names and responses on the provided data sheet.

STEP 4: PLOT YOUR DATA POINTS.

Label your x and y axes, and decide on an appropriate scale for your axes. Plot all of your data points for each of your three scatter plots.

STEP 5: ANSWER QUESTIONS.

Answer the questions on the back of the question sheet – did your scatter plots look the way you expected them to?

STEP 6: LINE OF BEST FIT.

Draw a line of best fit on the scatter plot that has a positive correlation and the scatter plot that has a negative correlation. Determine the equation for each line of best fit, and record it on your question page.

SCATTER PLOT 1 – POSITIVE CORRELATION DATA

Name	Variable 1:	Variable 2:

SCATTER PLOT 2 – NEGATIVE CORRELATION DATA

Name	Variable 1:	Variable 2:

SCATTER PLOT 3 – NO CORRELATION DATA

Name	Variable 1:	Variable 2:

SCATTER PLOT QUESTIONS

1) What variables did you choose for your <u>positive</u> correlation scatter plot? Why do you think these variables will have a <u>positive</u> correlation?
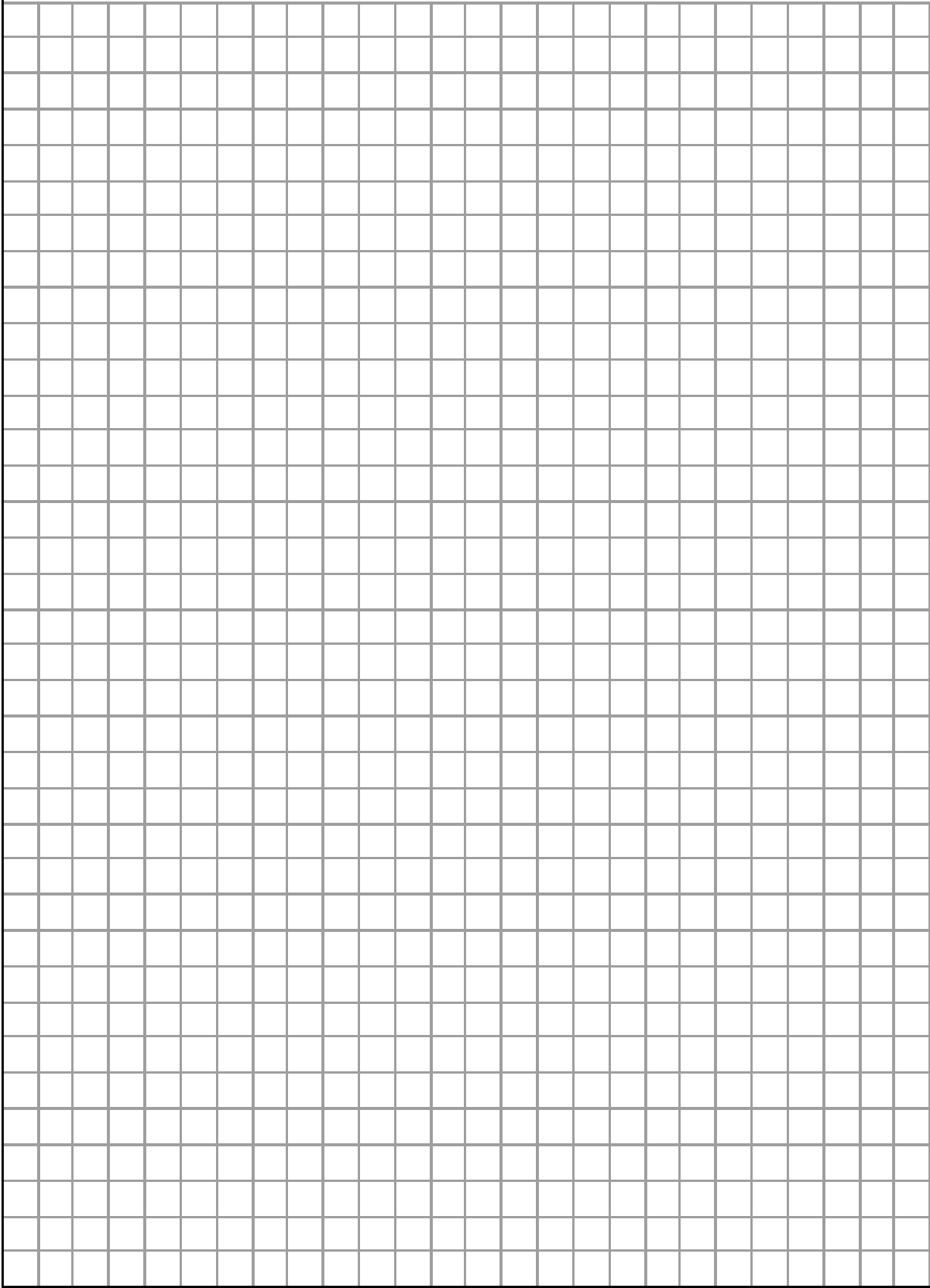
2) What variables did you choose for your <u>negative</u> correlation scatter plot? Why do you think these variables will have a <u>negative</u> correlation?

3) What variables did you choose for your <u>no</u> correlation scatter plot? Why do you think these variables will have <u>no</u> correlation?

4) Did any of the results of your questions surprise you? If so, which ones? Did the correlations turn out as you expected? Were any variables more or less correlated than you expected?

5) Write the equation for the line of best fit for your first scatter plot (positive correlation).

6) Write the equation for the line of best fit for your second scatter plot (negative correlation).
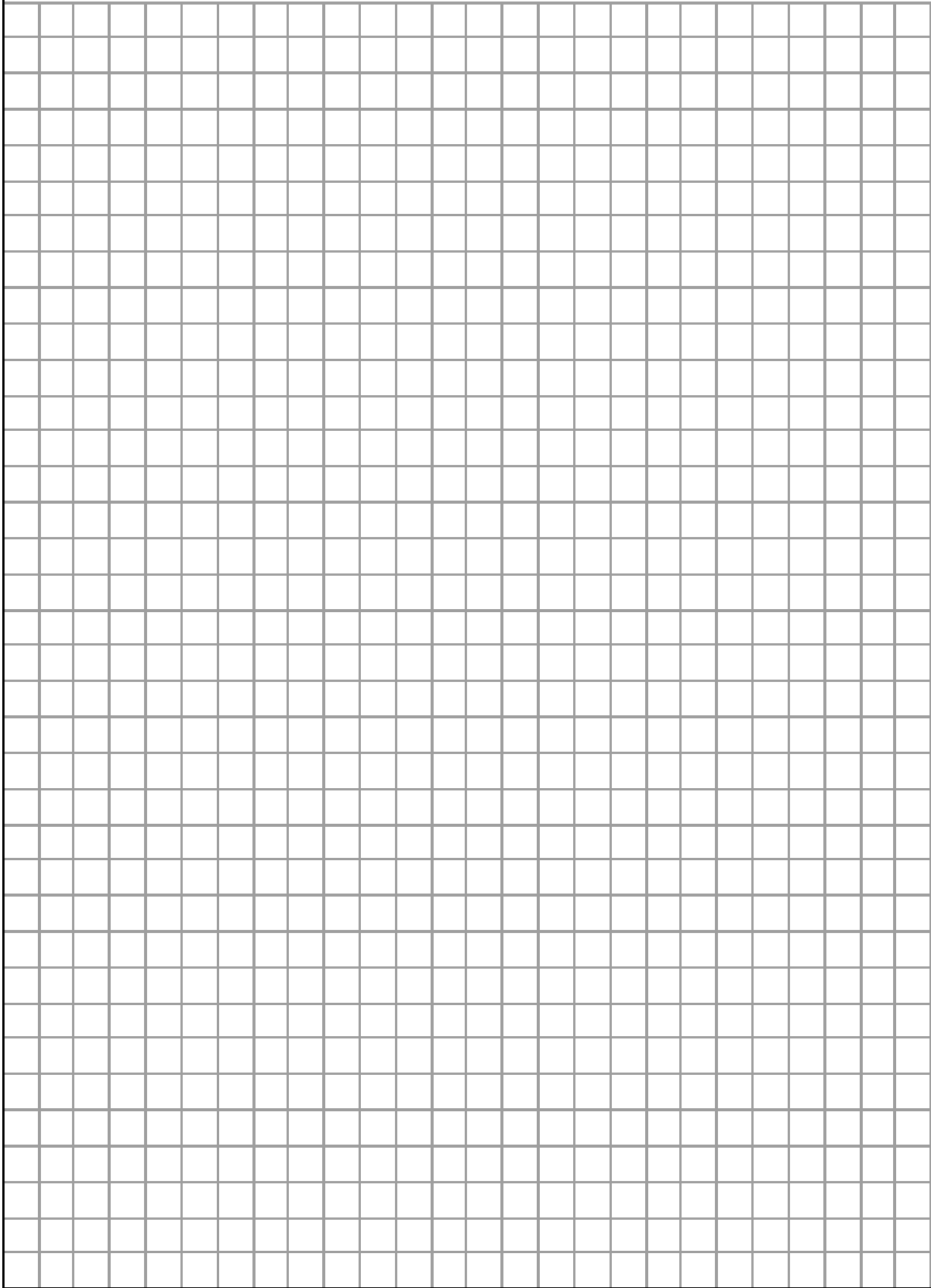
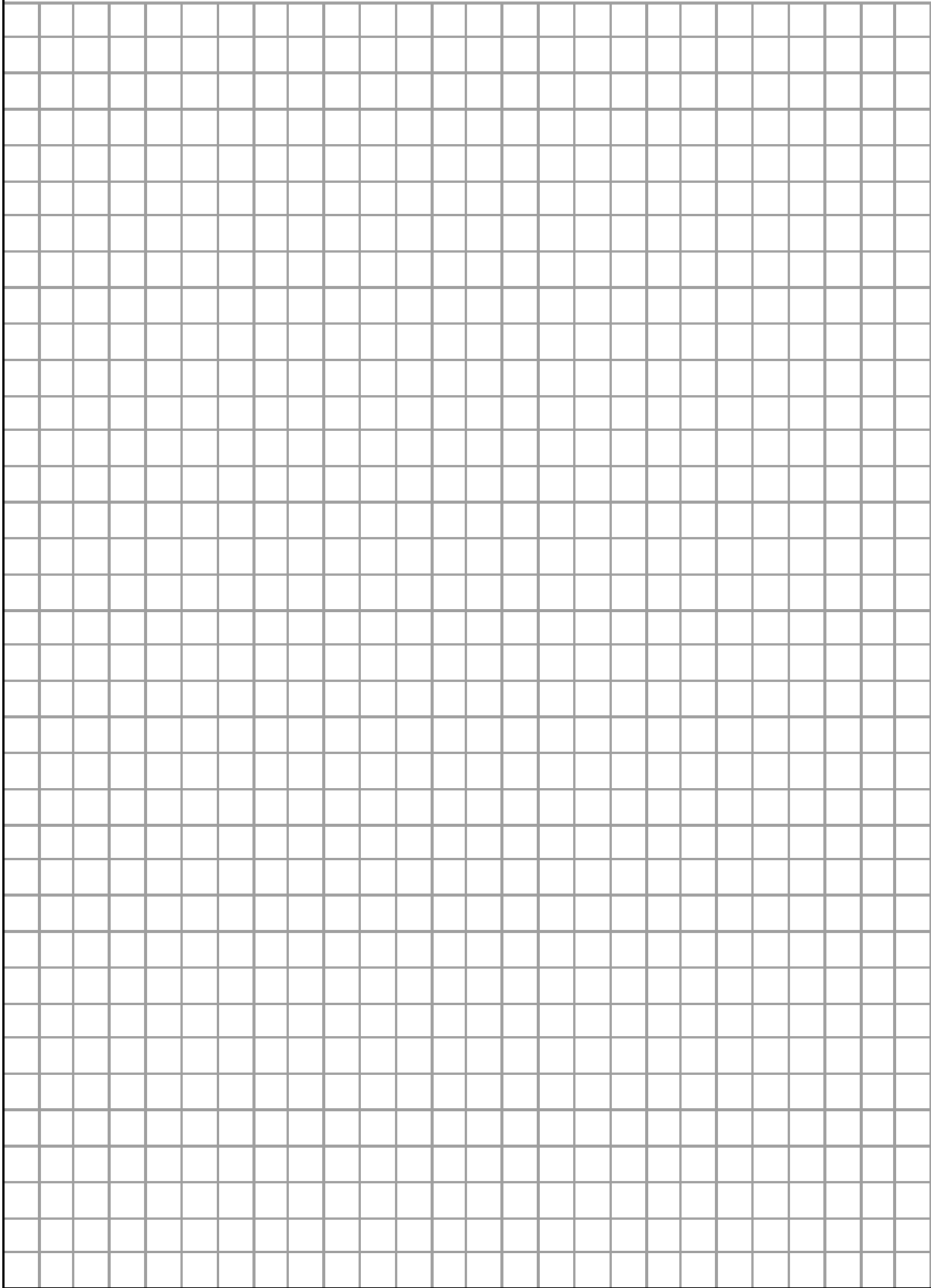# SCATTER PLOT 1 – POSITIVE CORRELATION

Y

X

SCATTER PLOT 2 – NEGATIVE CORRELATION

Y

X

Y

X

SCATTER PLOT PROJECT – GRADING RUBRIC

	3	**2**	**1**	**0**
Variable Selection	Reasonable variables are chosen for all three scatter plots	Reasonable variables are chosen for two scatter plots	Reasonable variables are chosen for one scatter plot	None of the scatter plots have reasonable variables
Questions #1-4	All questions are answered in complete sentences	All questions are answered	Some questions are answered	No questions are answered
Data Collection	All three scatter plots have 20+ data points	Two scatter plots have 20+ data points	One scatter plot has 20+ data points	None of the scatter plots have 20+ data points
Scatter Plots	All data points are plotted correctly for all three scatter plots	All data points are plotted correctly for two scatter plots	All data points are plotted correctly for one scatter plot	None of the scatter plots have correctly plotted data points
Line of Best Fit	The line of best fit is drawn correctly for each graph, and the equations are correct	The line of best fit is drawn correctly for each graph, and one equation is correct	The line of best fit is drawn correctly for each graph, but the equations are not correct	The line of best fit is not drawn correctly for either graph

Total points (out of 15): _____

If students are having trouble coming up with ideas for their variables, here are some that students have had success with in the past:

Positive Association	Negative Association	No Association
Height in inches & shoe size	Number of hours spent watching tv & time spent asleep	Number of Instagram followers & height
Number of siblings & number of bedrooms in house	Number of pages read in [book assigned in ELA] & number of pages left to read	Number of pets & favorite number
Number of library visits & number of books read	Number of sports played & time spent playing video games	Last digit of phone number & length of hair
Height in inches & wingspan in inches	School absences & test average	Locker number & house number
Distance from school & time to get to school	Number of states visited & number of states left to visit	Forearm length & number of close friends
Number of sports played & time spent exercising	Number of male teachers & number of female teachers	Number of sisters & number of times traveling to Canada