Correlation and Linear Regression

Relationship between height and shoe size activity

Data to collect: (Using a tape measure)

- Write down your height in inches
- Write down your shoes size in inches
- If you don’t know the exact value, make your best guess
- Don’t put any other information

Relationship between height and shoe size activity using Google Sheets

Student	Shoe size (inches)	Height (inches)
1	12	72
2	10.5	67
3	10	67
4	12.5	70
5	10.5	62
6	10.5	69
7	12.5	73
8	10.5	66.5
9	11.5	74
10	11.5	69
11	11.5	68.5
12	11	66.5
13	10.5	67
14	11	67
15	10.5	64
16	11	75
17	11	64.5
18	10.5	63.5

Record your height and shoe size (in inches). Input your data into the shared spreadsheet or report your data to your instructor

- Note your height in inches
- Note your shoe size in inches
- If you don’t know the exact value, make your best guess

Height vs. Shoe Size: Class results

Insert screenshot of a scatter plot of the class data
Display the R^2 value, line of best fit and its equation if possible

Class discussion: Variables and Correlation

Variable: Observations that can vary

- What are our variables in this activity?

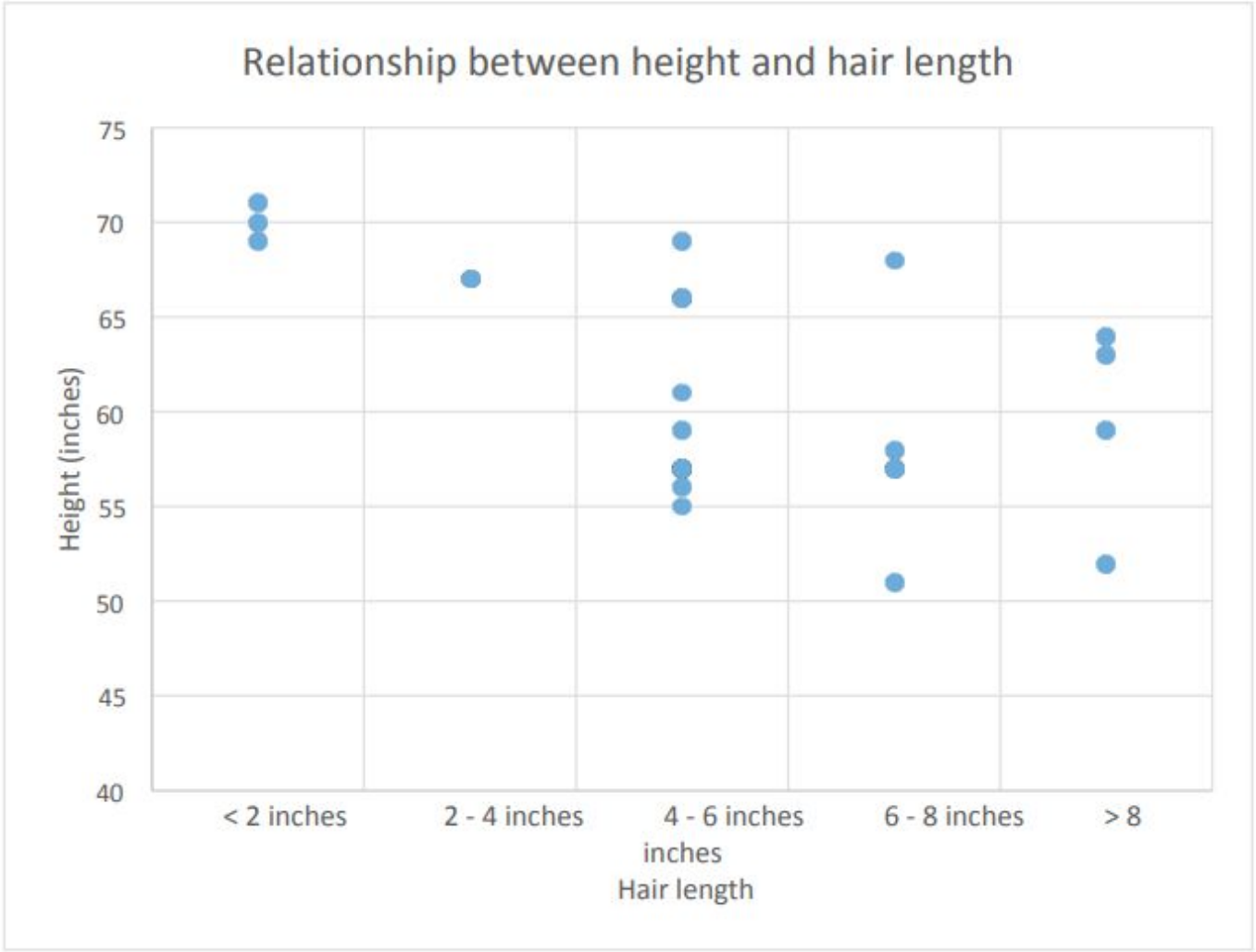
Correlation: A relationship or pattern between the values of two variables.

Positive correlation: As x increases, y tends to increase

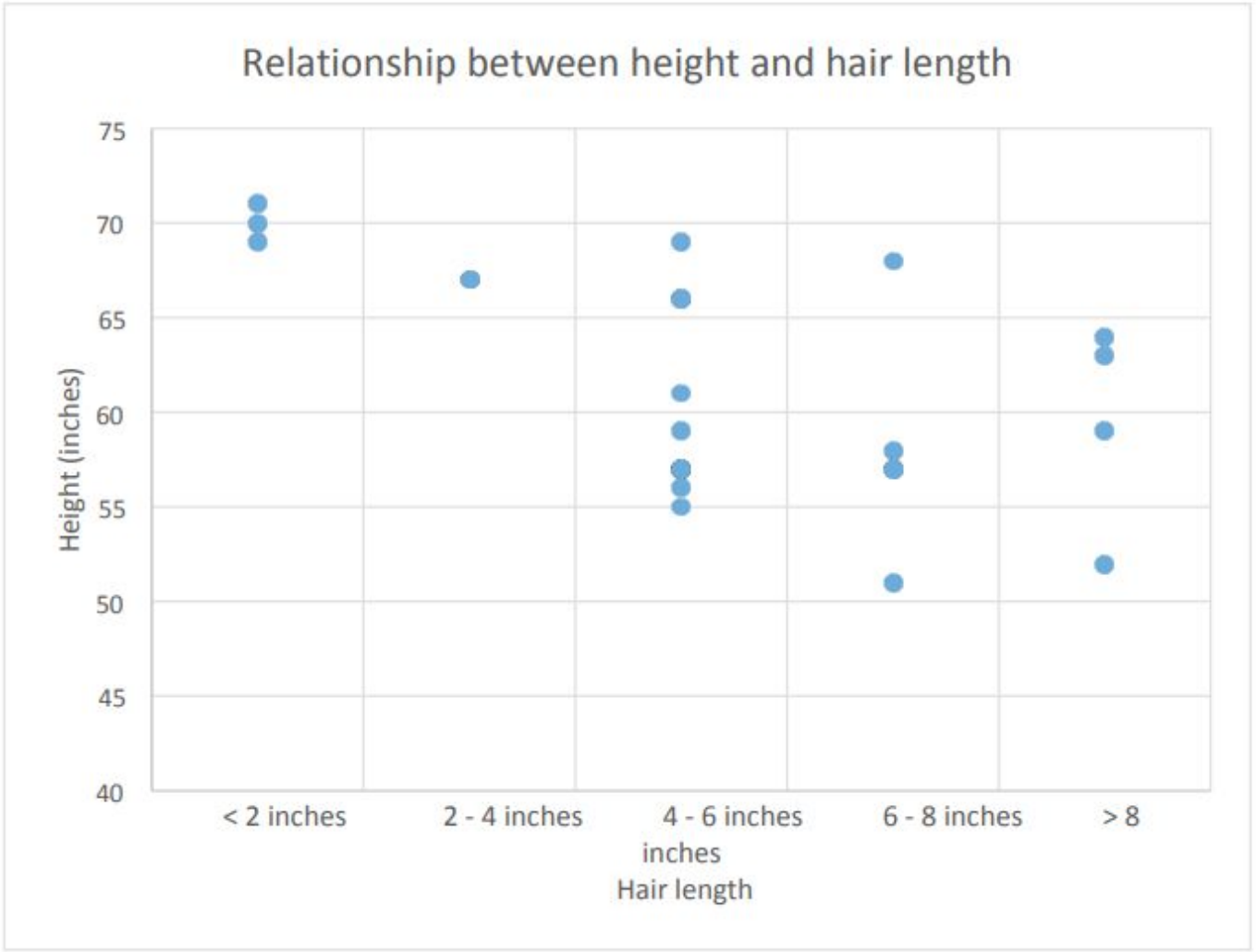
Negative correlation: As x increases, y tends to decrease

- Does there appear to be a correlation between our two variables?
- If so, how would you describe it?
- What conclusions, if any, can you draw from our graph?

Example: Relationship between height and hair length



Does being being taller cause you to have shorter hair?



Example: height vs hair length for men and women