

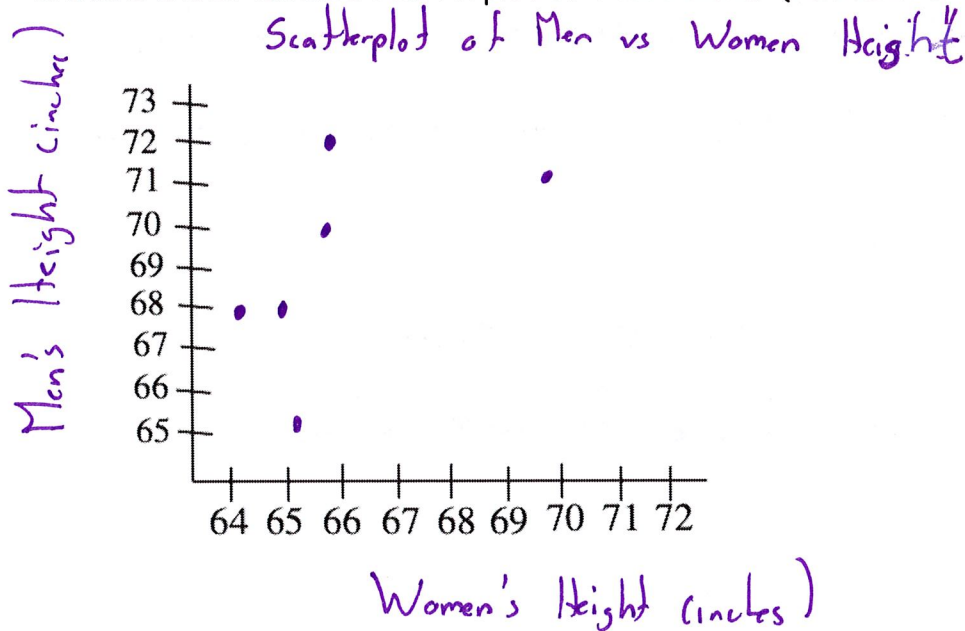
A student wonders if tall women tend to date taller men than do short women. She measures herself, her dormitory roommate, and the women in the adjoining rooms; then she measures the next man each woman dates. Here are the data (heights in inches):

Women	66	64	66	65	70	65
Men	72	68	70	68	71	65

1. Is there a clear explanatory variable and response variable in this setting? If so, tell which is which. If not, explain why not.

Since student's question is "Do taller women date taller men?" the implication is that the women's heights explain the heights of their dates.

2. Make a well-labeled scatterplot of these data. (REMEMBER TO NAME AXES!)



3. How would you describe the form of the relationship?

There appears to be a positive relationship between the heights of women and men, but it is not very strong.

4. Based on the scatterplot, do you expect the correlation to be positive or negative? Near ± 1 or not? Explain

I expect the correlation to be positive since the scatterplot shows a weak positive relationship. I expect it to be around $r = 0.4$ or 0.5 based on scatterplot.

5. Use your calculator to find the correlation r between the heights of the men and women. Do the data show that taller women tend to date taller men? Explain.

$r \approx 0.565$ Since r is positive, there is some evidence that taller women tend to date taller men.

6. How would r change if

• all the men were 6 inches shorter than the heights given in the table?

* Subtracting the same amount from each y value will not change the correlation.

(Because r uses the standardized values of the observations, r does not change when we change the units of measurement of x , y , or both)

• heights were measured in centimeters rather than inches? (There are 2.54 centimeters in an inch.)

* Multiplying each height by a constant to convert height to cm will not change the correlation.

** Review HW problems from 3.1 A and 3.1 B *****

Review the Facts about Correlation from your notes