


Notes 4.5 – Statistics

Lesson – Scatter Plots and Correlation Coefficient

Word	Meaning/Notation	Example
Scatter Plot	A graph of plotted points that show the relationship between two sets of data	
Correlation Coefficient r-value	a number that is a measure of the strength and direction of the relationship between two variables	r will be between -1 and 1

Create a scatterplot from the given data.

x	2	2.3	3.3	3.7	4.2	4.6	4.5	5	5.5	5.7	6.1	6.4
y	1	1.5	2.5	1.9	2.8	3.2	4.5	3.7	1.7	4.8	2.7	2.3

Scale of x-axis: 0-7

$$7 \div 20 = .35$$

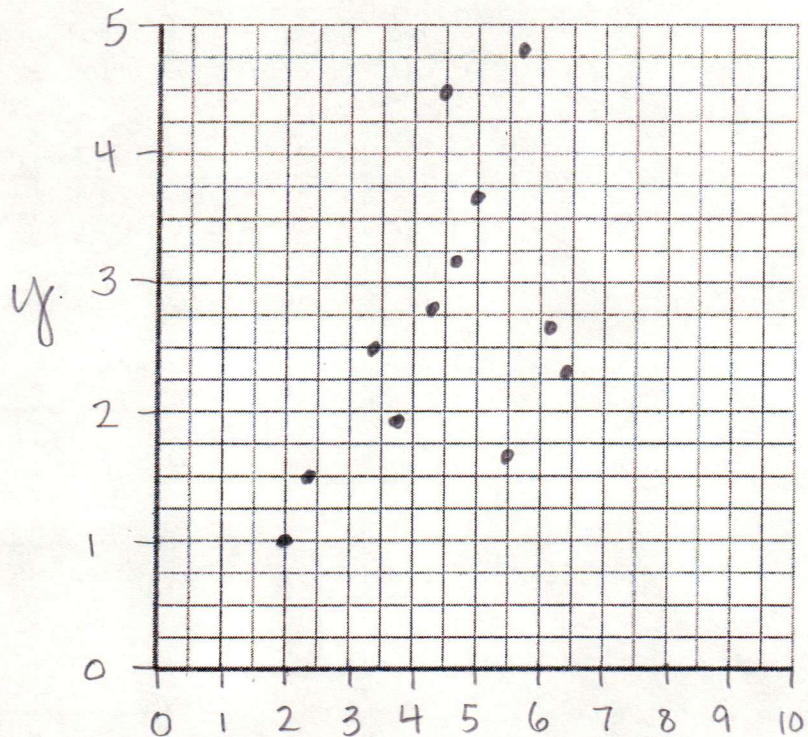
round to .5

One box = $\frac{1}{2}$

Scale of y-axis: 0-5

$$5 \div 20 = .25$$

One box = $\frac{1}{4}$




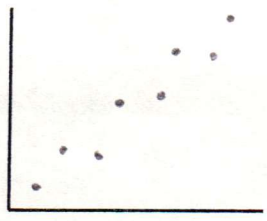


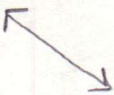
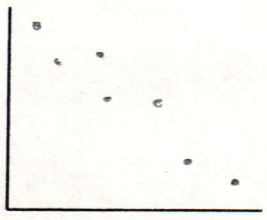


x

Correlation Coefficient

$\pm .8 - 1$

$\pm .3 - .79$

$\pm .1 - .29$

$0 = \text{no correlation}$	Strong	Moderate	Weak
Positive 			
Negative 			

What does the r value tell us about the relationship between the two variables?

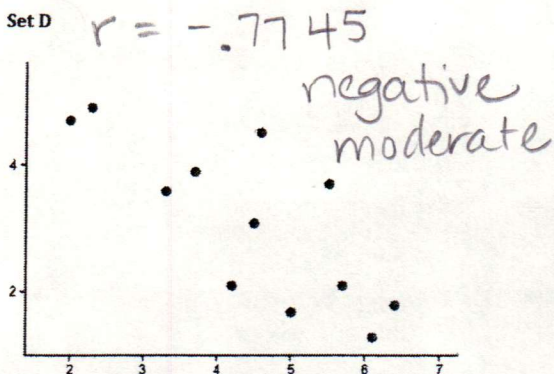
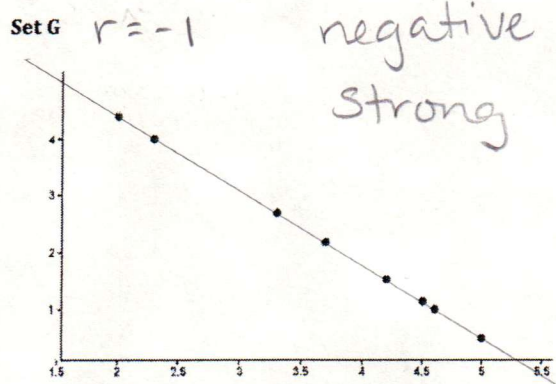
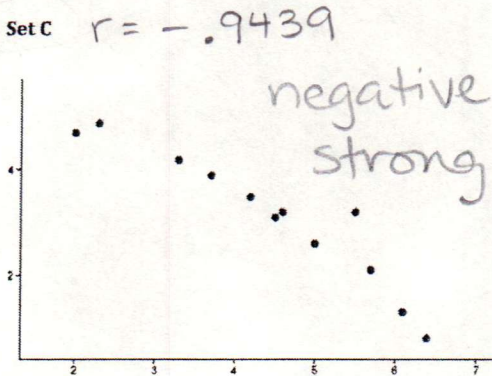
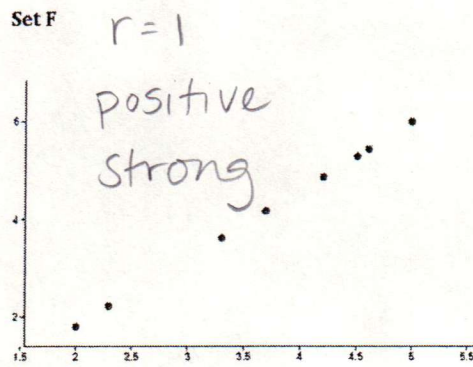
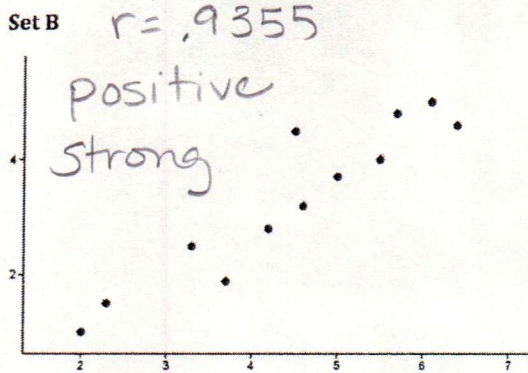
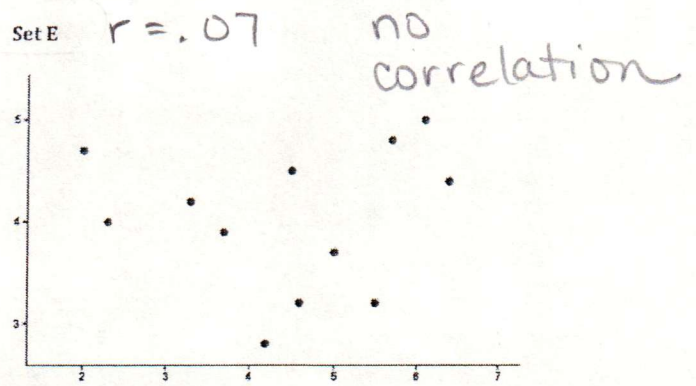
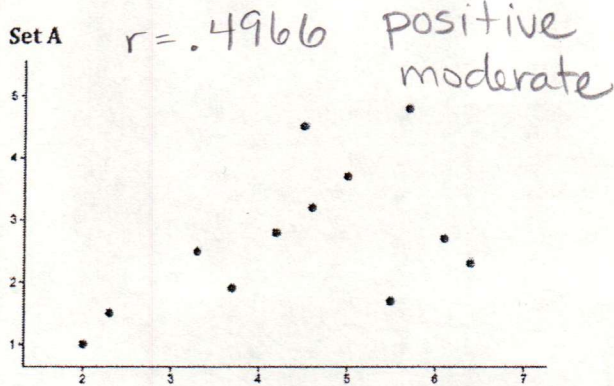
How strong the pattern is and the direction

strong = close to line weak = spread out

Give an example with a positive correlation between two things.

Give an example of a negative correlation between two things.

Match the scatterplot with the r value, then state the direction (positive/negative) and the strength (strong/moderate/weak) of the correlation.



Correlation Coefficients

- ~~$r = -1$~~
- ~~$r = -.9439$~~
- ~~$r = -.7745$~~
- ~~$r = 0.07$~~
- ~~$r = 0.4966$~~
- ~~$r = 0.9355$~~
- $r = 1$

Draw a line of best fit through each scatterplot..

