Feedback — Quiz: Week Three

You submitted this quiz on **Fri 10 Apr 2015 12:24 PM PDT**. You got a score of **6.00** out of **6.00**.

Question 1

The correlation coefficient is **NOT** a measure of:

Your Answer		Score	Explanation
○ 1. The strength of a straight line relationship between X and Y			
○ 2. The association between two random variables in a sample			
○ 3. The association between one random variable and one fixed variable in a sample			
○ 4. The magnitude of the slope of the straight line relationship between X and Y			
⦿ 5. Options 3 and 4 above.	✔	1.00	Good job. The correlation coefficient is only a measure of the strength of a relationship between 2 **random** variables (a correlation). Furthermore, the correlation coefficient can tell us the direction of a slope (if R is negative, the slope will be negative), but **not** the magnitude of the slope (R will

increase if the covariance between X & Y increases- even
if the slope remains the same).

○ 6. None of the
above

Total	1.00 / 1.00

Question 2

Consider ρ_{xy}=1. Which of the following statements are true.

Select all that apply

Your Answer	Score	Explanation
☑ All of the variance in Y is explained by the regression of Y on X	✔ 0.33	With regards to ρ_{xy}=1, this statement **is** true.
☑ The relationship between X & Y is perfectly linear	✔ 0.33	With regards to ρ_{xy}=1, this statement **is** true.
☑ The conditional variance of Y = 0	✔ 0.33	With regards to ρ_{xy}=1, this statement **is** true.
Total	1.00 / 1.00	

Question 3

The correlation coefficient is the proportion of the variance in Y explained by X.

(please answer True or False below)

Your Answer	Score	Explanation
○ True		
⦿ False	✔ 1.00	Good job!

The correlation coefficient squared is the proportion of the variance in Y explained by X

Total	1.00 / 1.00	

Question 4

If r^2 is high, we can assume that there is a strong linear association between X and Y.

(please answer True or False below)

Your Answer	Score	Explanation
○ True		
◉ False	✔ 1.00	Good job! r^2 is not a measure of the appropriateness of the straight-line model. A non-linear model may better describe the relationship between X and Y, even if the r^2 is large.
Total	1.00 / 1.00	

Question 5

If the mean square due regression greatly exceeds the mean square due residual, then we reject the null and conclude the slope is zero.

(please answer True or False below)

Your Answer	Score	Explanation
○ True		
◉ False	✔ 1.00	Good job. In this case we would reject the null and conclude that there is

sufficient evidence that the slope does **not** equal zero.

Total	1.00 / 1.00

Question 6

When looking at the STATA output of a regression of Y on X, which of the following could indicate that linear model is significantly better than the naive model?

Select all that apply

Your Answer	Score	Explanation
☑ The confidence interval for the slope	✔ 0.33	
☐ The r^2 value	✔ 0.33	The r^2 value does not indicate significance.
☑ The F statistic	✔ 0.33	
Total	1.00 / 1.00	