Quiz 2

1 – Which of the following is the statistical equation for a line relating individual x-values to individual y-values?

* Y = mX + b
* Y = B0 + B1 + B2 + … + Bn
* **Y = B0 + B1X1 + E ~ N(0,s)**
* Y = B0 + B1X1

2 – Which of the following is the correct definition of the confidence interval?

* There’s a 95% chance that the true value is in the interval
* **95% of such intervals contain the true value**
* The probability of getting observed interval (or something more extreme) is 0.95
* There is a 95% confidence that the true value is in the interval

3 – In estimating the line that best fits the data, regression uses two measures: What are those measures? In other words, what qualities will the best-fit line have?

* Minimize average error; sum of squared error = 0
* **Average error = 0; minimize sum of squared error**
* Total sum of squares = 0
* Average error = 0; minimize sum of squares due to regression

4 – There are three characteristics of the data and underlying relationship that influence the significance (p-value) of a regression analysis. What are they?

* **Sample size, effect size, noise**
* Total sum of squares, sum of squared error, sum of squares due to regression
* Slope, confidence interval, R^2
* Sample size, effect size, slope

[It’s not the last one, because effect size and slope are the same thing!]

5 – Which of the following is the correct definition of the r^2?

* **Proportion of variation in Y explained by variation in X**
* Probability that Y has a relationship with X
* Absolute amount of variation in Y explained by variation in X
* Amount of variation in X explained by Y