11 In one of the SPSS tables there is a value for the 'Standard Error of the Estimate'. What is meant by this term?

a. The estimated explained variance.

b. The estimated spread of the values of `physfunc` around the population regression line.

c. The estimated standard deviation of the predictions of `physfunc`.

d. The estimated standard error of the slope of the regression line.

12 What is the percentage of explained variance in the sample?

a. 15.3%.

b. 22.1%.

c. 18.0%.

d. 23.0%.

13 Test the null hypothesis $H_0 : \beta_1 = 0$. What applies to the p-value of this test?

a. p is greater than 0.10.

b. p is between 0.10 and 0.05.

c. p is between 0.05 and 0.01.

d. p is less than 0.01.

14 What is the 95% confidence interval for the slope β_1?

a. (0.07, 1.59).

b. (0.11, 1.55).

c. (0.15, 1.51).

d. (0.21, 1.45).

15 The Standard Error of the slope of the regression line is 0.35. What does this mean?

a. The spread in possible values of b_1 (in other samples from the same population) is equal to 0.35.

b. The population parameter β_1 equals 0.83 in 35% of the samples.

c. The dispersion of the points around the regression line equals 0.35, for each value of the independent variable `emotwllb`.

d. That 35% of the possible values of b_1 (in other samples from the same population) is equal to 0.83.

(Exam 2009-2010)

Questions 16 to 18 all deal within simple linear regression contexts.

16 Which is *NOT* an assumption or requirement of the simple linear regression model?

a. The residuals follow a normal distribution.

b. The variance of the subpopulations is assumed equal for each value of the independent variable.

c. The variance of the dependent variable is equal to the variance of the independent variable.

d. There is a linear relation between the independent variable and the mean of the dependent variable.

17 Which of the following claims, in the context of simple linear regression, is *true*?

a. The population regression line is given by $y = b_0 + b_1 x$.

b. For a given x-value, the 95% confidence interval for y is wider than the 95% prediction interval for y.

c. SSM, the Model Sum of Squares, is given by $\sum_i (y_i - \bar{y})^2$.

d. Testing H: $\beta_1 = 0$ vs. $\beta_1 \neq 0$ is equivalent to testing H: $R^2 = 0$ vs. $R^2 \neq 0$.