SOLUTIONS

(1) A linear regression model makes which of these assumptions? **(A)**

(2) To infer that the model is statistically significant overall the *F* test statistic must be _______. **(C)**

(3) To infer that β_2 is less than 10 the *t* test statistic must be smaller than _______. **(C)**

(4) You can recognize that the data are _______________. **(A)**

(5) For a simple regression a low value of the coefficient of determination (R^2) suggests that _____________________. **(E)**

(6) Which is the *best* interpretation of the coefficient 0.0019 on the house size variable? **(D)**

(7) What are the critical values for the test of statistical significance for β_1? **(E)**

(8) What is the test statistic for the hypothesis test H_0: $\beta_2 = 1$ and H_1: $\beta_2 > 1$? **(B)**

(9) What is the approximate p-value for the overall test of statistical significance of the model? **(E)**

(10) To encourage students …. What should the professor conclude? **(D)**

(11) Compared to Graph 1, Graph 2 clearly shows a case where the standard error of estimate is ___________ and the standard error of the slope is ___________. **(E)**

(12) Is there sufficient evidence to conclude that increasing cough syrup by 1 mL decreases the number of coughs by at least 0.02 per hour (i.e. to infer that the research hypothesis H_1: $\beta < -0.02$ is true)? **(D)**

(13) We can be 98% confident that an extra mL of cough syrup reduces the number of coughs per hour by _____________ coughs. **(A)**

(14) If you give a person 30 mL of cough syrup you can be 90% confident that that person will cough between _____________ times per hour. **(A)**

(15) Suppose someone has a psychological disorder and coughs 100 times per hour. If that person had been randomly sampled and randomly assigned to receive zero mL of cough syrup how would this affect our analysis? **(A)**