

Quiz 6 – ENGG 319 -Fall 2016

Question 1

Consider the following set of coded experimental data between the two variables x (regressor) and y (response). $(x, y) = \{ (26.8, 26.5), (25.4, 27.3), (28.9, 24.2), (23.6, 27.1), (27.7, 23.6), (23.9, 25.9), (24.7, 26.3), (28.1, 22.5), (26.9, 21.7), (27.4, 21.4), (22.6, 25.8), (25.6, 24.9) \}$. Determine the x -value for which the estimated value of y is 25.77.

- (a) 25
- (b) 23
- (c) 21
- (d) 29
- (e) 27

Question 2

Consider the following set of coded experimental data between the two variables x (regressor) and y (response). $(x, y) = \{ (26.8, 26.5), (25.4, 27.3), (28.9, 24.2), (23.6, 27.1), (27.7, 23.6), (23.9, 25.9), (24.7, 26.3), (28.1, 22.5), (26.9, 21.7), (27.4, 21.4), (22.6, 25.8), (25.6, 24.9) \}$. Construct a 99% confidence interval for the intercept of the population regression line.

- (a) (22, 63)
- (b) (20, 62)
- (c) (21, 65)
- (d) (23, 66)
- (e) (20, 61)

Question 3

Consider the following set of coded experimental data between the two variables x (regressor) and y (response). $(x, y) = \{ (26.8, 26.5), (25.4, 27.3), (28.9, 24.2), (23.6, 27.1), (27.7, 23.6), (23.9, 25.9), (24.7, 26.3), (28.1, 22.5), (26.9, 21.7), (27.4, 21.4), (22.6, 25.8), (25.6, 24.9) \}$. Construct a 99% confidence interval for the slope of the population regression line.

- (a) (-1.5, 0.1)
- (b) (-1.2, 0.07)
- (c) (-1, -0.5)
- (d) (.2, .6)
- (e) (-0.6, -0.2)

Question 4

Consider the following set of coded experimental data between the two variables x (regressor) and y (response). $(x, y) = \{ (26.8, 26.5), (25.4, 27.3), (28.9, 24.2), (23.6, 27.1), (27.7, 23.6), (23.9, 25.9), (24.7, 26.3), (28.1, 22.5), (26.9, 21.7), (27.4, 21.4), (22.6, 25.8), (25.6, 24.9) \}$. What is the value of the point estimate of the population variance of the error term in the simple linear regression model of these two variables?

- (a) 2.7
- (b) 3
- (c) 1.4
- (d) 2.1
- (e) 3.4

Question 5

Consider the following set of data between the two variables x (regressor) and y (response). $(x, y) = \{ (61, 4.28), (63, 4.08), (67, 4.42), (69, 4.17), (70, 4.48), (74, 4.3), (76, 4.82), (81, 4.7), (86, 5.11), (91, 5.13), (95, 5.64), (97, 5.56) \}$. Compute the coefficient of determination.

- (a) 0.9
- (b) 0.8
- (c) 0.85
- (d) 0.75
- (e) 0.7

Question 6

Consider the following set of data between the two variables x (regressor) and y (response). $(x, y) = \{ (61, 4.28), (63, 4.08), (67, 4.42), (69, 4.17), (70, 4.48), (74, 4.3), (76, 4.82), (81, 4.7), (86, 5.11), (91, 5.13), (95, 5.64), (97, 5.56) \}$. Consider the hypothesis test whether the population slope is different than zero at a 5% level of significance. What is the observed t value?

- (a) 9.4
- (b) 9
- (c) 8.8
- (d) 8.5
- (e) 8.2