

Sample Quiz 8

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Question 1-9: A prediction model for the selling price (Y , in thousands) of a house is to be developed. It's believed that the selling price is influenced by the assessed values (X_1 , denoted as Assessed, in thousands) of the house, the amount of time it took the house to sell (X_2 , denoted as Time, in months) and whether the house is a new house or an old house (X_3 , denoted as New, in particular, we set $X_3=0$ for a new house and $X_3=1$ for an old house). 32 houses are randomly selected and the computer output is provided below:

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	35.946	2.7038	11.446	1.19E-11
Assessed	0.5173	0.0283	18.299	2.26E-16
Time	-0.1644	0.0720	-2.284	0.0308
New	-1.0965	0.6888	-1.592	0.1235

- Which of the following equation is the correct multiple regression equation for the data?

A) $\hat{Y} = 35.946 + 0.5173X_1 - 0.1644X_2 - 1.0965X_3$	B) $\hat{Y} = 35.946 + 0.5173X_1 + 0.1644X_2 - 1.0965X_3$
C) $\hat{Y} = 35.946 + 0.5173X_1 - 0.1644X_2 - 1.0965X_3$	D) $\hat{Y} = 35.946 + 0.5173X_1 - 0.1644X_2 + 1.0965X_3$
- If the computer output for the multiple coefficient of determination is .9454. Which of the following statement is correct?
 - 97.23% of the variability in the selling price can be explained by Assessed, Time, and New.
 - 5.46% of the variability in the selling price can be explained by Assessed, Time, and New.
 - 94.54% of the variability in Time can be explained by Assessed, selling price, and New.
 - 94.54% of the variability in the selling price can be explained by Assessed, Time, and New.
- Which of the following best represents the interpretation of the slope b_2 ?
 - For each one-month increase in the selling time, the Price will decrease by 0.1644 on average.
 - For a unit increase in the Price, the selling time will decrease by 0.1644 on average if Assesses and New are held constant.
 - For each one-month increase in the selling time, the Price will decrease by 0.1644 on average if Assessed and New are held constant.
 - For each one-month increase in the selling time, the Price will decrease by -0.1644 on average if Assessed and New are held constant.
- What is the predicted selling price (in thousands) of an old house that took 20 months to sell and is assessed at \$70,000 ?

A) 67.773	B) 68.869	C) 36242.562	D) 36243.658
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- Suppose we want to test whether the coefficient on New is significant, what is the value of the relevant test statistic t_{cal} ?

A) 11.446	B) -2.284	C) 0.1235	D) -1.592
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- Suppose we want to test whether the coefficient on Time is significant, what is the value of the relevant test statistic t_{cal} ?

A) 0.0308	B) -2.284	C) -1.592	D) 18.299
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- 7) The 99% confidence interval estimate for the slope for New variable is _____ to _____.
- A) -2.7958 to 0.6028 B) -0.8069 to 2.9999 C) -2.2682 to 0.6028 D) -2.9999 to 0.8069
- 8) At the 0.01 level of significance, what conclusion should we draw regarding the inclusion of the Assessed variable in the regression model?
- A) The Assessed variable is significant in explaining the selling price and should be included in the model because its p value is less than 0.01.
- B) The Assessed variable is not significant in explaining the selling price and should not be included in the model because its p value is more than 0.01.
- C) The Assessed variable is not significant in explaining the selling price and should not be included in the model because its p value is less than 0.01.
- D) The Assessed variable is significant in explaining the selling price and should be included in the model because its p value is more than 0.01.
- 9) At the 0.01 level of significance, what conclusion should we draw regarding the inclusion of Time in the regression model ?
- A) Time is significant in explaining the selling price and should be included in the model because its p value is more than 0.01.
- B) Time is not significant in explaining the selling price and should not be included in the model because its p value is more than 0.01.
- C) Time is not significant in explaining the selling price and should not be included in the model because its p value is less than 0.01.
- D) Time is significant in explaining the selling price and should be included in the model because its p value is less than 0.01.

Answer Key

Testname: SAMPLE_QUIZ8.TST

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) C
- 2) D
- 3) C
- 4) A
- 5) D
- 6) B
- 7) D
- 8) A
- 9) B