Question 1

1 pts

I promise that I will not cheat.

Note: You will receive a zero on this exam if you do not agree to this question.

- ○ True
- ○ False

Question 2

1 pts

I agree that if the instructors have evidence that I cheated, I will fail this course and be reported to the university.

Note: You will receive a zero on this exam if you do not agree to this question.

- ○ True
- ○ False

Question 3

0 pts

Enter your name to certify that you agree to both of the previous statements.

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Question 4

3 pts

As the sum of the squared residuals (SSE) increases, our t statistics also increase.

- ○ True
- ○ False

Question 5

3 pts

Heteroskedasticity can be the result of the wrong model specification.

- ○ True
- ○ False

Question 6

3 pts

In practice (in the "real world"), you should generally avoid heteroskedasticity-robust standard errors.

- ○ True
- ○ False

Question 7

3 pts

If you use homoskedasticity-based standard errors when the disturbances are actually heteroskedastic, then your coefficients are biased. (Assume all other requirements/assumptions for OLS are met.)

- ○ True
- ○ False

Question 8

3 pts

When you square a variable, it is equivalent to interacting the variable with itself.

- ○ True
- ○ False

Question 9

3 pts

The White test for heteroskedasticity and the Breusch-Pagan test for heteroskedasticity detect similar types of heteroskedasticity.

- ○ True
- ○ False

Question 10

3 pts

$$\text{Health}_i = \beta_0 + \beta_1 \text{Income}_i + \beta_2 \text{Age}_i + \beta_3 \text{Income}_i \times \text{Age}_i + u_i$$

In the model above: The effect of "Income" on "Health" depends upon the individual's age.

- ○ True
- ○ False

Question 11

3 pts

$$\log(\text{Income}_i) = \beta_0 + \beta_1 \text{Education}_i + u_i$$

Based upon the model above, if $\hat{\beta}_1 = 0.23$, then we interpret the effect of Education on Earnings as "an additional year of education will (on average) increase income by approximately 0.23% (holding everything else constant)."

- ○ True
- ○ False

Question 12

3 pts

Suppose you observe that whenever the variable X increases, the variable Y also increases.

This observation implies that either (1) X causes Y *or* (2) Y causes X.

- ○ True
- ○ False

Question 13

3 pts

$$\log(\text{Income}_i) = \beta_0 + \beta_1 \log(\text{Education}_i) + u_i$$

Based upon the model above, if $\hat{\beta}_1 = -0.12$, then we interpret the effect of Education on Earnings as "a one percent increase in education will (on average) decrease income by approximately 12% (holding everything else constant)."

- ○ True
- ○ False

Question 14

3 pts

$$\text{Income}_i = \beta_0 + \beta_1 \text{Education}_i + \beta_2 (\text{Is Female})_i + \beta_3 \text{Education}_i$$

Let the variable "Is Female" be an indicator variable for whether the individual is identified as female in the dataset.

In the model above, an additional year of education will (on average) increase income for a female by $\beta_2 + \beta_3$.

- ○ True
- ○ False

Question 15

3 pts

$$\text{Income}_i = \beta_0 + \beta_1 (\text{Is Female})_i + u_i$$

Let the variable "Is Female" be an indicator variable for whether the individual is identified as female in the dataset.

In the model above, β_1 gives the average level of income for females.

- ○ True
- ○ False

Question 16

3 pts

In increase in R^2 implies that your model is performing better.

- ○ True
- ○ False

Question 17

3 pts

If the distribution of an estimator is centered on the target parameter—even as the sample size (n) goes to infinity—then the estimator is unbiased.

- ○ True
- ○ False

Question 18

3 pts

A static time-series model includes only lags of the explanatory variables—not of the outcome.

- ○ True
- ○ False

Question 19

3 pts

Measurement error (as defined in class) creates a negative bias for OLS coefficients.

- ◯ True
- ◯ False

Question 20

3 pts

Measurement error occurs when the outcome variable is measured with noise/error.

- ◯ True
- ◯ False

Question 21

3 pts

A dataset that observes the several individuals during a single time period is an example of time-series data.

- ○ True
- ○ False

Question 22

3 pts

Weighted least squares (WLS) "up-weights" observations with high-variance disturbances and "down-weights" observations with low-variance disturbances.

- ○ True
- ○ False

Question 23

3 pts

$$\text{Income}_i = \beta_0 + \beta_1 \text{Education}_i + u_i$$

Suppose you are interested in the model above and that you actually observe the disturbance.

You plot the disturbance against the explanatory variable and find that there is no relationship between Education and u_i.

You should not conclude that exogeneity is satisfied.

- ○ True
- ○ False

Question 24

3 pts

A log-linear model implicitly assumes an exponential relationship between the outcome and the explanatory variable. A fully linear model does not assume this exponential relationship.

- ○ True
- ○ False

Question 25

3 pts

Exogeneity requires that the disturbances do not correlate with the outcome variable.

- ◯ True
- ◯ False

Question 26

3 pts

A standard error tells us about the variation in an estimator's distribution.

- ○ True
- ○ False

Question 27

3 pts

Omitted-variable bias tends to bias OLS coefficients toward zero.

- ○ True
- ○ False

Question 28

3 pts

Omitted-variable bias occurs when you omit a variable from your regression *and* the omitted variable is correlated with one of your regressors *and* the omitted variable affects your outcome variable.

- ○ True
- ○ False

Question 29

3 pts

Our standard OLS assumptions require that Var(u) = 0.

- ○ True
- ○ False

Question 30

3 pts

If our assumption of exogeneity is satisfied, then *Correlation*(x,u) = 0 for any regressor x.

- ○ True
- ○ False

Question 31

3 pts

In a Goldfeld-Quandt test, if SSE_1 is much less than SSE_2, then we will typically conclude there is significant evidence of heteroskedasticity.

- ○ True
- ○ False

Question 32

3 pts

An estimator can be consistent without being unbiased.

- ○ True
- ○ False

Question 33

3 pts

The goal of prediction is to estimate the *outcome variable*, whereas the goal of causal inferences is to understand the relationship between the *outcome variable* and the *explanatory variable*.

- ○ True
- ○ False

Question 34

3 pts

We typically cannot observe the residuals, but we often can use the disturbances to "learn about" the residuals.

- ○ True
- ○ False

Question 35

3 pts

Omitted-variable bias is a violation of homoskedasticity.

- ○ True
- ○ False

Question 36

3 pts

Suppose you use OLS regression to obtain a coefficient estimate of 2.01 and a standard error of 0.1.

If you conduct a hypothesis test or calculate a confidence interval, you will conclude that the estimate significantly rejects the null hypothesis that the coefficient equals 1.

- ○ True
- ○ False