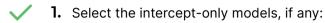


DM-Spring-2020-Q2-Grade

52.94% (9/17)



- **A** y=b0+b1*x
- B y=b0+b1*x1+b2*x2
- \bigcirc In(y)=b0
- $D y=e^{(b1*x)}$
- E I do not know

2. The interpretation of adjusted R² for multiple linear regression is the same as the interpretation of R² for simple linear regression.

- **A** True
- False
- C I do not know

3. Which one is observable ("visible")?

- A e (residuals)
- **B** ε (regression error)
- **C** neither
- **D** I do not know

 $\mathbf{\chi}$ **4.** The estimation of β is distributed as:

- **A** $b \sim N(0, \sigma^2)$
- B b~N(β, σ^2)
- c $b \sim N(\beta, \sigma^2(X^TX)^{-1})$
- It does not have distribution
- E I do not know

X	5.	How many parameters are estimated by OLS in the case of simple linear regression?
	A	1
	В	2
	C	3
	D	I do not know
X	6.	Estimation of e (residuals) is distributed as:
	A	$e \sim N(0, \sigma^2)$
	В	$e\sim N(0, \sigma^2 M)$ (M is a matrix)
	C	It does not have distibution
	D	I do not know
X	7.	b parameters can be computed using only
	A	OLS
	В	ML
	C	Neither
	D	I do not know
X	8.	In the case of multiple linear regression
	Α	adj R^2 < 1 (always)
	В	adj R^2 <= 1 (always)
	C	I do not know
/	9.	b=
	A	$(X'X)^{-1}X'Y$
	В	$(X'X)^{-1}Y'X$
	C	$(Y'X)^{-1}Y'X$
	D	I do not know
/	10.	The total sum of squares equals
	A	Sum((v-mean(v))^2)

B Sum((y_hat-mean(y))^2)

c Sum((y-y_hat)^2)

D I do not know

/	11.	The regression sum of squares equals
	Α	Sum((y-mean(y))^2)
	В	Sum((y_hat-mean(y))^2)
	C	Sum((y-y_hat)^2)
	D	I do not know
X	12.	If RSS is the regression sum of squares and ESS is the error sum of squares then
	Α	R2 = 1 - ESS/TSS
	В	R2 = ESS/TSS
	C	R2 = ESS/RSS
	D	I do not know
/	13.	Multicollinearity occurs when
	A	rank(X) <m (m="" explanatory="" is="" number="" of="" th="" the="" variables)<=""></m>
	В	$var(\varepsilon) = \sigma^2 I$
	C	E(ε)=0
	D	cov(εi,εj)=const
	E	I do not know
/	14.	In simple linear regression model response variable (y) can be
	Α	binary
	В	categorical
	C	numeric
	D	ordinal
	E	I do not know
X	15.	In a simple linear regression model, explanatory variables can be
	Α	binary
	В	categorical
	C	numeric
	D	ordinal
	E	I do not know
	F	all answers are correct
	G	Neither

X	16.	If A is a matrix, X is the vector of random variables, then var(AX)=
	Α	A'var(X)A
	В	A^2var(X)
	C	var(x)
	D	Can not be calculated
	E	I do not know
/	17.	Which of the answers can be used to conclude about the significance of variables (if any)?
	A	t values
	В	Estimated coefficients (only)
	C	SE of estimated coefficients (only)
	D	I do not know