

Least Squares Regression Analysis

Statistics · Answer Key · 10 Questions

1. What is the general form of the least squares regression line?

A) $y = a + bx$

B) $y = mx + c$

C) $y = ax + b$

D) $y = bx + a$

2. What is the value of the sum of the residuals ($\sum e_i$)?

A) 1

B) 0.259

C) 0

D) 0.72

3. What is the calculated sum of the squares of the residuals ($\sum e_i^2$)?

A) 0.259

B) 1.33

C) 16.9

D) 0.0784

4. In the equation $y = 0.72 + 1.33x$, what is the intercept 'a'?

A) 1.33

B) 0.72

C) 10

D) 16.9

5. In the equation $y = 0.72 + 1.33x$, what is the slope 'b'?

A) 0.72

B) 1.33

C) 10

D) 16.9

6. What is the estimated value of y when $x = 0$?

A) 0

B) 0.72

C) 1.33

D) 2.05

7. What is the estimated value of y when $x = 1$?

- A) 0.72
- B) 1.33
- C) 2.05**
- D) 3.38

8. What is the estimated value of y when $x = 2$?

- A) 2.05
- B) 3.38**
- C) 4.71
- D) 6.04

9. What is the estimated value of y when $x = 3$?

- A) 3.38
- B) 4.71**
- C) 6.04
- D) 7.37

10. What is the estimated value of y when $x = 4$?

- A) 4.71
- B) 6.04**
- C) 7.37
- D) 8.70