

SOLUTIONS

You do, however need to be able to calculate the value of a and b from scratch using the calculator.



STEP 1: MENU

STEP 2: 6: Statistics

STEP 3: 2: $y=a+bx$

STEP 4: Input Data for x and y

STEP 5: AC

STEP 6: OPTN

STEP 7: 3: Regression Calc

a = the y-intercept value

b = the gradient value

1. A random sample of 8 pairs of values are given in the table:

x	1.2	0.5	0.8	0.1	2.3	1.1	1.8	2.2
y	8.1	4.3	7.1	3.5	12.8	8.4	9.9	11.4

a. Find the values of a and b for the least squares regression line of y on x

$$y = 3.2087 + 3.9830 x$$

b. Use your least squares regression line to estimate a value for y when x is 5

$$y = 23.1237$$

c. Is your answer for part (c) valid? Explain your answer

☐ Yes

☒ No

Because: this is extrapolation. The value used for x is outside of the parameters used to calculate the least squares regression line equation.

2. A random sample of six pairs of values are given in the table

G	55.7	10.4	67.1	91.2	30.8	72.1
h	21.2	45.9	88.3	1.4	75.4	21.4

a. Find the equation of the regression line of h on g

$$h = 70.7548 + -0.5222 g$$

b. Use your regression line to estimate a value for h when g is 45

$$h = 47.2558$$

c. Is your answer for part (c) valid? Explain your answer

☒ Yes

☐ No

Because: this is interpolation. The value used for g is well within the parameters used to calculate the least squares regression line equation.