

STATISTICS 4: QUIZ SOLUTIONS

Question 1

A city urban planning team in the USA collected data across 12 tech hubs on the number of public EV fast-charging stations (x) and the number of electric vehicles registered per 1 000 residents (y).

Number of EV Charging Stations	Number of EV Registrations
10	131
15	136
20	170
25	134
30	309
35	268
40	214
45	350
50	372
55	288
60	396
65	466

What is the linear correlation coefficient for this dataset?

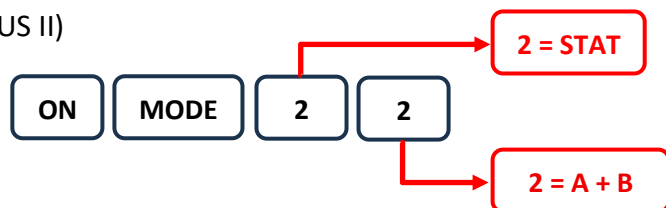
- A. 0,9452 B. 0,9003 C. 0,8106 D. -0,9003

Solution

The correct solution is B.

Keystrokes (Casio fx-82ZA PLUS II)

Start and go to STAT mode:



Enter x-values:



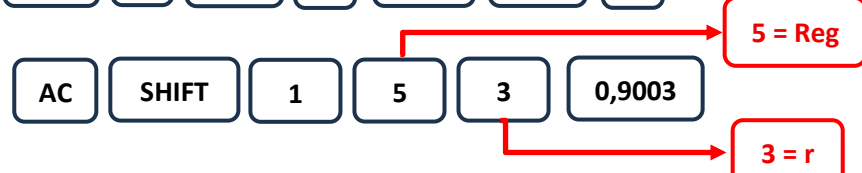
Move to top of y-column:



Enter y-values:



Calculate r:



Question 2

An educational research institute surveyed 12 remote software engineering students to measure daily time spent on AI coding assistants in hours (x) against their weekly project completion score out of 100 (y).

AI Usage (h/day)	Project Score
1	54
3	87
4	54
5	81
6	75
7	79
8	82
9	65
10	88
11	78
12	72
13	98

Calculate the linear correlation coefficient for this research.

A. 0,2498

B. 0,3841

C. 0,5206

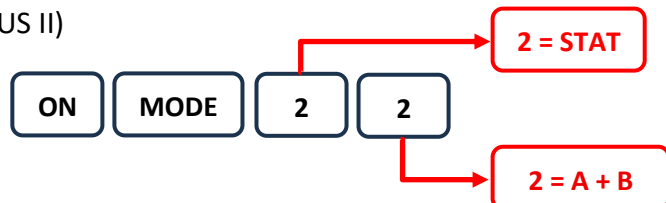
D. 0,6512

Solution

The correct solution is C.

Keystrokes (Casio fx-82ZA PLUS II)

Start and go to STAT mode:



Enter x-values:



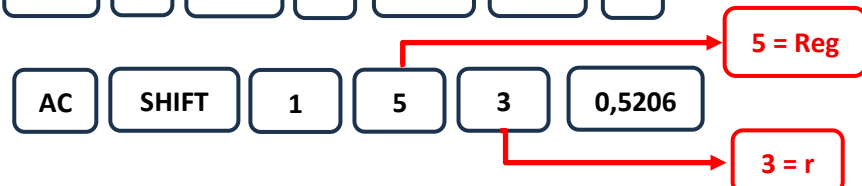
Move to top of y-column:



Enter y-values:



Calculate r:



Question 3

A wellness app tracked 12 adult users over a month to observe the relationship between weekly espresso/coffee consumption in cups (x) and average daily step count in thousands (y).

Coffee Consumption (Cups per week)	Number of Steps (1 000s)
1	24
2	34
3	29
4	27
5	30
6	26
7	41
8	46
9	25
10	22
11	35
12	28

Determine the linear correlation coefficient between these two variables.

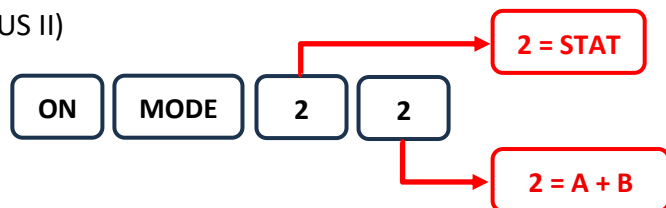
- A. - 0,0099 B. - 0,0,999 C. 0,0999 D. 0,2104

Solution

The correct solution is C.

Keystrokes (Casio fx-82ZA PLUS II)

Start and go to STAT mode:



Enter x-values:



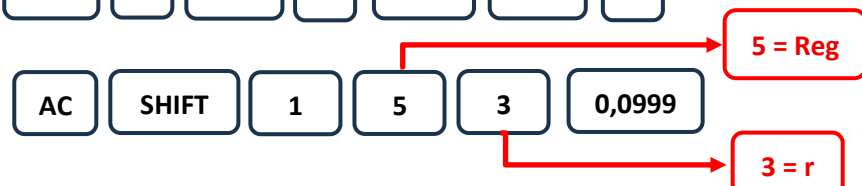
Move to top of y-column:



Enter y-values:



Calculate r:



Question 4

A sleep health laboratory monitored 12 young adults by tracking their daily screen time on social media in hours (x) and their hours of deep sleep logged via smart watch (y).

Screen Time (h)	Deep Sleep (h)
3	9
4	6
5	9
6	9
7	5
8	7
9	5
10	7
11	7
12	7
13	4
14	5

Calculate the linear correlation coefficient between daily screen time on social media and hours of deep sleep.

A. - 0,7198

B. - 0,5999

C. - 0,3599

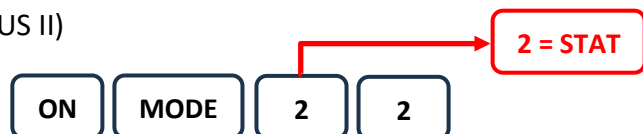
D. 0,5999

Solution

The correct solution is B.

Keystrokes (Casio fx-82ZA PLUS II)

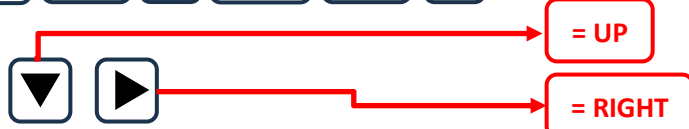
Start and go to STAT mode:



Enter x-values:



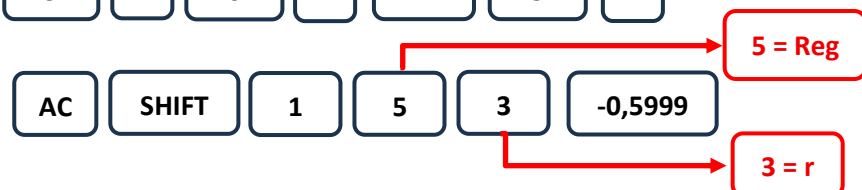
Move to top of y-column:



Enter y-values:



Calculate r:



Question 5

A technology researcher tested 12 electric delivery vehicles of similar model years to see how total battery charge cycles in hundreds (x) affects the remaining usable battery state-of-health percentage (y).

Charge Cycles (100s)	Usable Battery (%)
1	72
2	89
3	95
4	96
5	93
6	79
7	68
8	64
9	61
10	60
11	53
12	57

What is the linear correlation coefficient for this dataset?

A. - 0,7999

B. - 0,6398

C. 0,7999

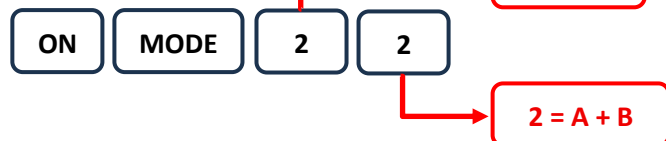
D. 0,8999

Solution

The correct solution is A.

Keystrokes (Casio fx-82ZA PLUS II)

Start and go to STAT mode:



Enter x-values:



Move to top of y -column:



Enter y -values:



Calculate r :

