

Chapter 7 / Example 3

Pearson's product-moment correlation coefficient

A school basketball coach kept a record of the number of games played (x) and the number of points scored (y) for seven basketball players.

Player	Games (x)	Points (y)
Ali	3	9
Mateo	4	10
Jerry	4	20
Poom	4	16
Ayo	5	20
Chen	6	29
Jimmy	10	43

Use Pearson's correlation coefficient to determine the strength of the correlation between the number of games played and the number of points scored.

Open a new document and add a Lists & Spreadsheet page.

Type 'x' in the first cell.

Type the number of games played in the first column.

Press **enter** or **▼** after each number to move to the next cell.

Note: 'x' is a label that will be used to calculate the correlation coefficient. You can use any letter or name to label the list.

A	B	C	D
x			
1	3		
2	4		
3	4		
4	4		
5	5		

Type 'y' in the cell to the right of 'x'

Enter the number of points scored in the second column.

Use the **▲ ▼ ► ◀** keys on the touchpad to navigate the spreadsheet.

A	B	C	D
x	y		
1	3	9	
2	4	10	
3	4	20	
4	4	16	
5	5	20	

To calculate the correlation coefficient

Press **menu** 4:Statistics | 1:Stat Calculations | 3:Linear Regression (mx+b)...

Open the drop down lists with **►** and select using **▼** and **enter**

Choose 'x' for X List and 'y' for Y List and leave the remaining fields unchanged.

Click the touchpad on OK or press **enter**

Linear Regression (mx+b)

X List: x

Y List: y

Save RegEqn to: r1

Frequency List: 1

Category List:

Include Categories:

OK Cancel

Chapter 7 / **Example 3**

Pearson's product-moment correlation coefficient

Scroll down the calculated values to 'r'.

$$r = 0.957.$$

Since $0.75 < r \leq 1$, this is a strong correlation.

The image shows a TI-Nspire CX calculator screen with a table of data and linear regression statistics. The table has four columns: A (x), B, C, and D. The data rows are as follows:

	A x	B	C	D
2	4	10	RegEqn	m*x+b
3	4	20	m	4.83913
4	4	16	b	-3.88696
5	5	20	r ²	0.915978
6	6	29	r	0.957068

The status bar at the bottom shows 'C6 = "r"'.