

The student is working on the following problem:

Table 1. shows the number of goals that each football player striker scored between 2007 and 2011. Who is the most consistent player? Immagine a measure of "consistency" and justify why you think your method is correct.

Year	Mike Arwen	Dave Backhand	Ivan Right
2007	13	12	14
2008	12	14	10
2009	15	16	18
2010	17	15	18
2011	13	13	15

The solution of this problem is:

The concept of standard deviation is the usual way to measure consistency but it is not expected that the student knows it. Any measure proposed by the student to measure consistency is acceptable as long as it can be justified.

Example of canonical solution: computing the variance (or standard deviation) for each player: First, compute the mean:

Mean number of goals for Mike: 14

Mean number of goals for Dave: 14

Mean number of goals for Ivan: 15

Then, compute the sum of square deviations from the mean for each player.

Then devide by the number of data points to get the variance:

Variance for Mike: $12/5 = 3.2$

Variance for Dave: $10/5 = 2$

Variance for Ivan: $44/5 = 8.8$

So according to the variance, Dave is the most consistent player.



Hello! I am your tutor. Can you walk me through your solution?

hey! i'm kinda stuck with this problem... idk what a 'measure of consistency' really means. we haven't learned anything like variance or std deviation yet... do u have any idea where i should start?



Sure, let's think about what consistency might imply in a sports context. What does it mean for a player to be consistent in scoring goals across different years? How might you describe their performance if you wanted to show they maintain a similar level each year?

ok, so if a player is consistent, their number of goals wouldn't change much from year to year... right? to show this, i guess i could look at how much their goals scored goes up or down each year? like if it stays around the same number, they'd be consistent. so maybe we could use the difference between each year's goals and the average? how does that sound?



That's a very good line of reasoning. How might you plan to use these differences in scores to compare the players? What could you do with those differences to help you evaluate consistency?

hmm, i could take each player's goals for a year and subtract the average goals they scored over the 5 years. this would give me how far off they are from their average each year, right? then i could add up these differences... but if they score less in one year and more in another, it will cancel out. so maybe i should make all the differences positive by squaring them? then add those up. wouldn't that tell me something about how consistent they are? the lower the number, the more consistent?



Exactly, you're on the right track! Give it a try and see what you can come up with using that method. Remember, the goal is to construct your own measure of consistency and justify it based on the data provided. Good luck! If you find yourself needing more guidance, feel free to reach out again. Have a great day!

got it, thanks! i'll try that out. might need to get back to you though! have a good one! Goodbye!



ok/CX3

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