

Name: \_\_\_\_\_

Show work needed to justify your answer.

Date: \_\_\_\_\_

HW: # 28: Math IBSL - Standard 27 - Measuring Correlation

5 points

- 2 Uncle Mac insisted that his motorcycle would always be valuable, regardless of its age. His nephew, Jay, recorded its age and value in this table.

Age (years)	1	2	3	4	5	6	7	8	9	10
Price (euros)	40000	36500	31000	26658	24250	19540	19100	18750	15430	12600

- Find the value of  $r$ .
- Describe the correlation.
- Will the price of the motorcycle continue to decrease forever? Was Uncle Mac right? Discuss your answers with a classmate.

- a)  $r = -0.976$   
b) Strong Negative  
c) maybe NOT forever but eventually the bike will NOT be worth anything.

- 3 For a biology project, Luciana surveyed the heights and shoe sizes of her friends.

Height (cm)	148	153	165	142	155	141	171	154	170	168
Shoe size	34	38	42	36	42	32	40	34	40	38

- Find the value of  $r$ .
- Describe the correlation between height and shoe size for Luciana's friends.

- a)  $r = 0.707$   
b) moderate Positive

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- 4 The students' council took a sample of both the number of hours that its members studied on the night before a test and their test score.

Time (hr)	6	4	7	5	1	2	4	6	8	4
Score	78	80	86	88	66	70	78	95	97	76

- Find the  $r$ -value.
- Describe the correlation.
- Based on the results for the sample, would you say that more study time leads to a better test score?

- a)  $r = 0.878$   
 b) STRONG POSITIVE  
 c) yes.

- 5 Thierry had always been told that he spent too much time playing computer games and not enough time studying. He disagreed with this, and conducted a survey of his friends and their GPA.

GPA	3.9	2.7	3.8	2.4	1.7	2.6	4.0	3.7
Game time (hrs week <sup>-1</sup> )	10	14	5	8	24	17	21	7

- Find the value of  $r$ .
- Describe the correlation.
- Based on your results, determine whether Thierry was right, and give a reason for your answer.

- a)  $-0.449$   
 b) weak negative  
 c) He is correct. Correlation between GPA and time playing games is weak.