

Question 5

The data in the vector `moses` give the times (in seconds) for the athlete Edwin Moses' uninterrupted sequence of wins in 400-metre Hurdles races, which lasted from 2 September 1977 to 29 May 1987. There are 122 race times in the sequence, and these can be plotted against race number, 1, 2, ..., 122. This is a slightly artificial regression construction, but lends some insight into the data. Find the slope of the least squares regression line through the data.

Options

- A 48.86 B 0.0053 C 0.0041 D -0.0053
 E 0 F -2.923 G -0.0041 H -12.46
-

Question 6

Question 5, continued. Use the fitted regression line to calculate the total SP in a test of the hypothesis that Moses' times are essentially unaltered through the ten-year sequence. (That is, the athlete showed no underlying improvement; nor, with the passage of time, were his times getting worse.)

Options

- A 0.0041 B 0.0021 C 0 D 1
 E 0.9979 F 0.0053 G 0.9959 H 0.5

Questions 7 to 12 are based on material covered in *Chapter 11*.

Question 7

Calculate the sample Pearson correlation coefficient r for the data points (3.1, 12.4), (3.4, 11.5), (4.4, 10.8), (4.4, 9.4), (5.2, 8.7), (5.5, 8.0).

Options

- A -0.9856 B -0.9619 C -0.2578 D 1
 E 0 F -0.9777 G -0.5349 H -1
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Question 8

The four data sets shown in Figure 11.9 on page 439 of the course text are saved as `anscombe` in the SSC data subdirectory. Find the total SP for an exact test that the underlying Pearson correlation is 0, for the first of the four.

Options

- A 0.8164 B 0 C 1 D 0.5001
 E 0.0022 F 0.0011 G 0.9978 H 0.0033
-

Question 9

Question 8, continued. Calculate the Spearman correlation for the first and second of the four data sets invented by Anscombe. (Choose two options.)

Options

- A 0.8164 B -0.8182 C 0.8182 D 0.5
 E -0.6909 F -0.9909 G 0.6909 H 0.9909
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