

Spearman's rank worksheet – Lesson 2 of

Statistics
Spearman's rank

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$$r_s = 1 - \frac{6 \sum D^2}{n(n^2 - 1)}$$

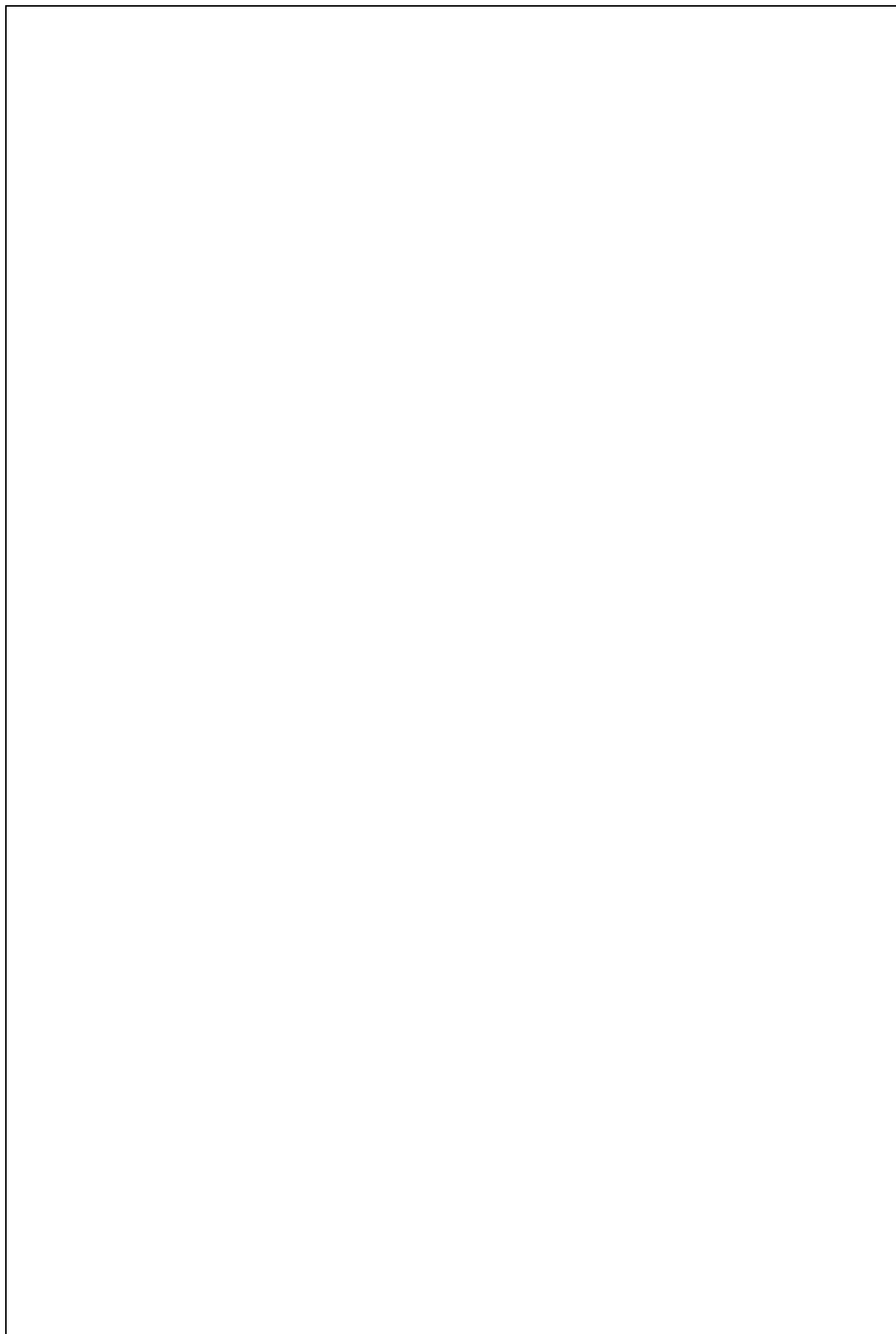
Statistics: Spearman's rank worksheet – Lesson 2 of 2

Task 1

Care home assistants took blood pressure readings from two types of patients across various areas. The table below shows the results. Calculate the Spearman's coefficient of rank correlation for the following table.

Comment on the relationship found between blood pressure readings of the two types of patients.

Question 1	
Patient A	Patient B
9,000	1,040
13,000	6,500
6,000	3,040
8,800	2,300
2,200	4,800



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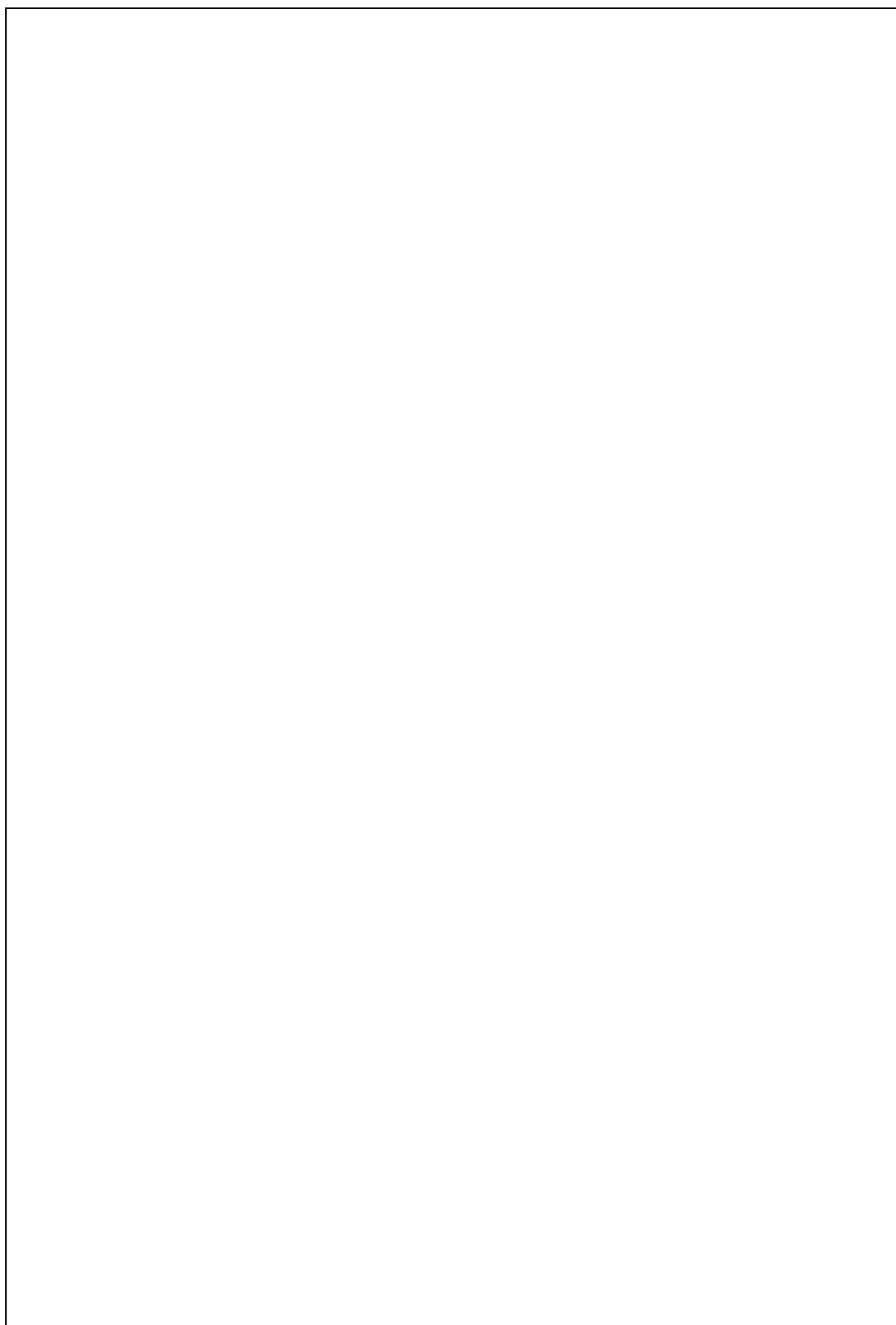
$$r_s = 1 - \frac{6 \sum D^2}{n(n^2 - 1)}$$

Task 2

Scientists were gathering height data from people whose heights were over 165cm in two cities. This data will later be used to contribute to a genetic study. Calculate the Spearman's coefficient of rank correlation for the following datasets.

Comment on the relationship you have found.

Question 2	
City 1	City 2
880	712
900	888
913	995
786	750
912	850
750	900
520	650
611	555



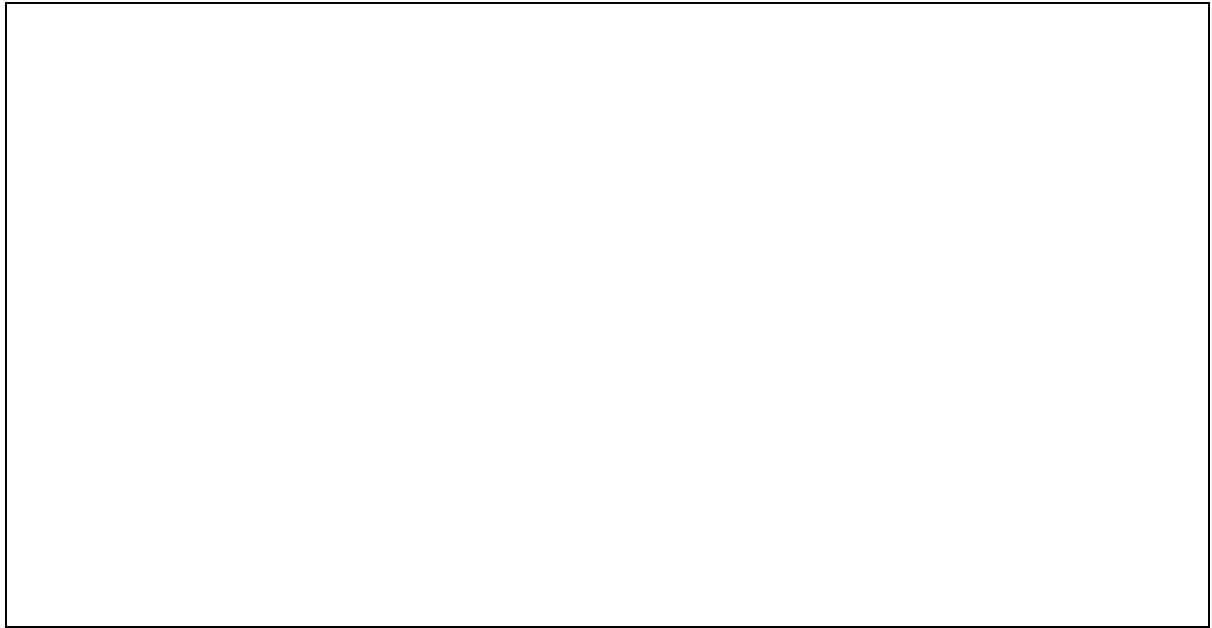
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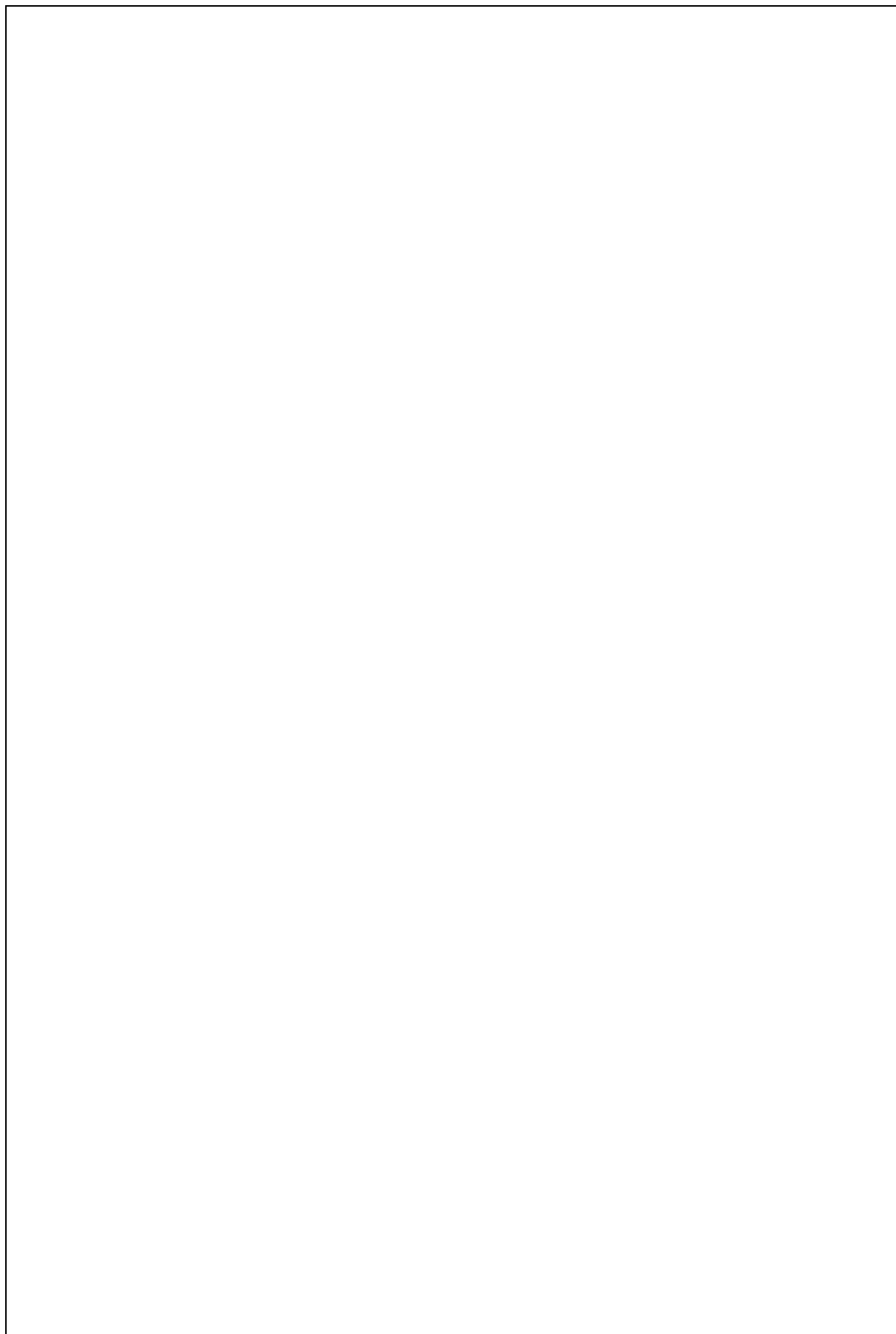
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Task 3

To monitor patient data relating to asthma, scientists collected data from across all departments at two hospitals for the number of people who had taken a spirometry test. The results are shown in the table below. Calculate the Spearman's coefficient of rank correlation for the following table.

Question 3	
Hospital 1	Hospital 2
80,880	60,000
95,000	53,000
73,000	79,000
82,000	90,000
63,000	95,000
15,000	67,000
90,000	95,000
32,000	38,000
16,000	39,000
75,000	44,000
61,000	63,000
45000	59000
53,000	81,000





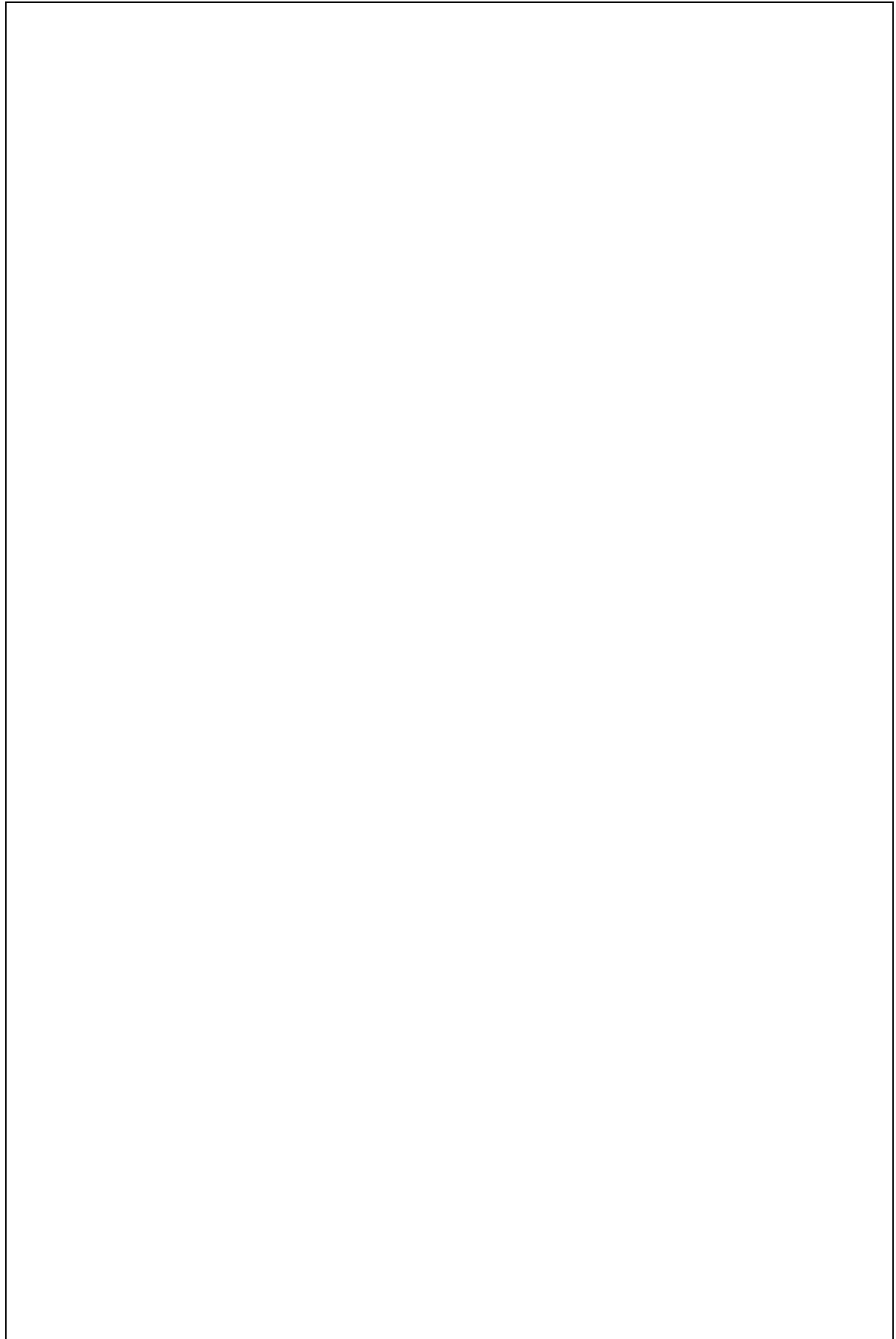
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Task 4

A hospital reviewed the volume of blood samples collected by two doctors from six different patients. The table below displays their results. The hospital is keen to find out the correlation between the two. Calculate the correlation.

Volume collected by doctor A	Volume collected by doctor B
20	30
29	31
23	32
31	26
30	29
24	33



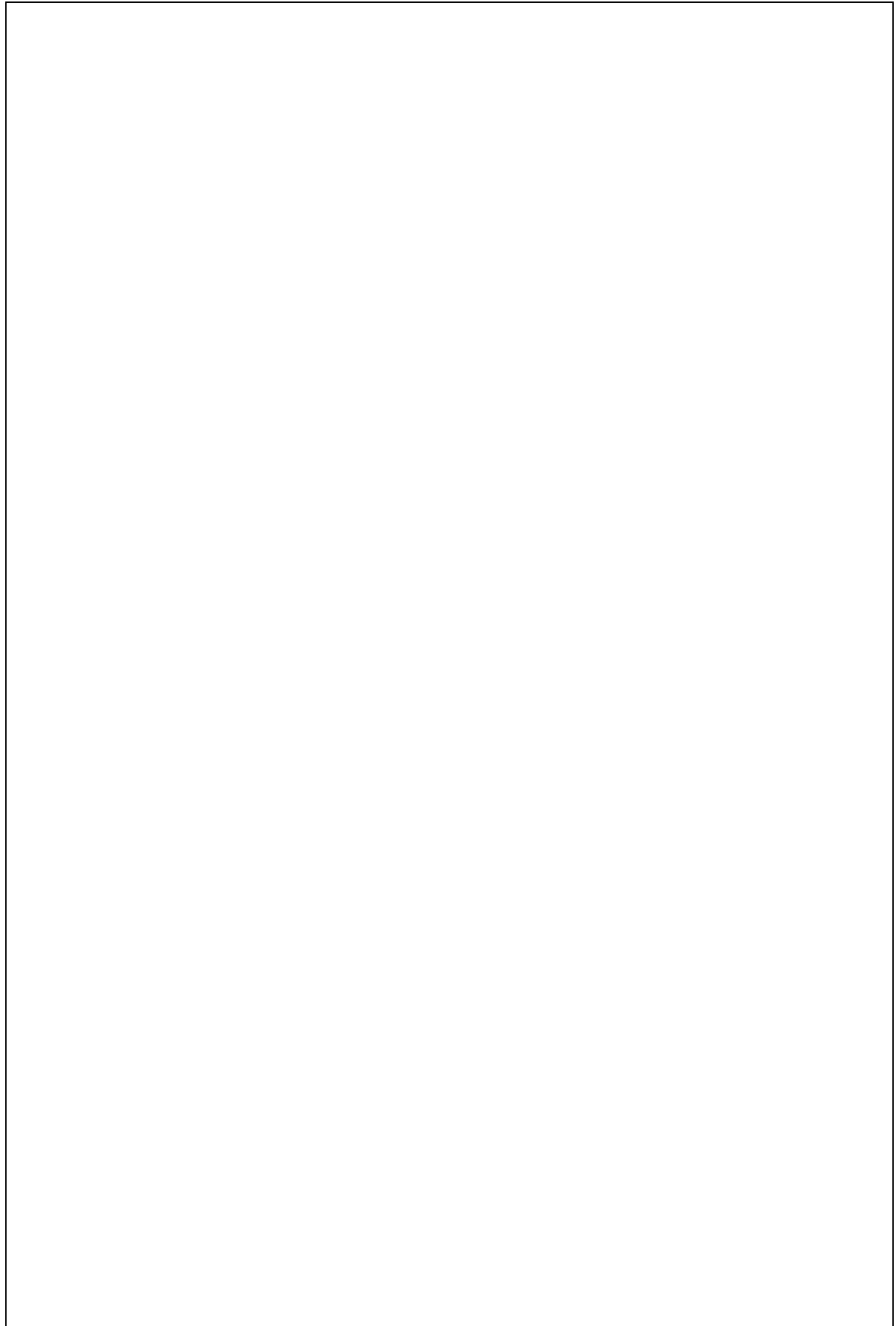
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$$r_s = 1 - \frac{6 \sum D^2}{n(n^2 - 1)}$$

Task 5

Two scientists collected bacteria samples across six different locations. The table below displays their results. Calculate the Spearman's coefficient of rank. Comment on the correlation you have found.

Scientist A	Scientist B
15	17
19	15
12	13
18	13
13	14



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