A researcher decided to examine the relationship between the number of churches in a town and the number of bars to see if churches influence the number of bars opened. Given the following data 1) create a scatter plot, 2) find *r*, and 3) use the five hypothesis testing steps to determine if that correlation is significant at the .05 significance level.

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| --- | --- | --- |
|  | Bars | Churches |
| City 1 | 83 | 151 |
| City 2 | 572 | 2598 |
| City 3 | 22 | 120 |
| City 4 | 28 | 291 |
| City 5 | 38 | 341 |
| City 6 | 250 | 2402 |
| City 7 | 22 | 148 |

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| Step 1:  Random selection – yes  X and Y are scale – yes  X and y are normal – no  Homoscedasticity - looks ok |
| Step 2:  R: r for bars and churches =/0  N: r for bars and churches = 0 |
| Step 3:  r = .9  df = N – 1- 1 (N – 2)  7 – 2 = 5 |
| Step 4:  + and – 2.57 |
| Step 5:  4.74 |
| Step 6:  Reject |