A local scientist from the American Alzheimer’s Institute has come to you with data she needs assistance with. She informs you that identifying individuals with a high risk of Alzheimer’s disease usually involves a long series of cognitive tests (aka Cognitive Series) which take a lot of time and cost a great deal of money. However, her firm has developed a 7-minute scree, which is a quick and easy way to accomplish the same goal. The question is whether the 7-minute Screen is as effective as the complete series of tests. If it is, this could save billions of dollars and make Alzheimer’s screening available to all regardless of their insurance status, time availability, or income status.

Amelia Aardvark, the founder and President of the American Alzheimer’s Institute gathered data to test this. She administered both the long Cognitive Series screen, and 7-minute test to a group of patients and obtained these data:

Patient                     7-Minute Screen                          Cognitive Series

A                                     3                                                        11

B                                     8                                                        19

C                                     10                                                     22

D                                     8                                                        20

E                                      4                                                        14

F                                      7                                                        13

G                                     4                                                        9

H                                     5                                                        20

I                                       14                                                     25

 Compute Pearson correlation coefficient to measure the degree of relationship between the two test scores. Is the correlation statistically significant? Be sure to use a two-tail test with an **α=.01**.  What percentage of variance for the cognitive scores is predicted from the 7-minute Screen scores? What does this mean? Should the 7-Minute screen be adopted widely? Why or why not?

 Provide a quality and comprehensive statistical report to inform Amelia Aardvark of your findings and policy recommendations. Be sure your report is complete as she’ll need to share this information with her Board of Directors promptly.