Modern techniques and developed sciences allow professionals to solve many different problems. One such problem is to find a criminal suspect. At the crime scene, criminalists can locate and determine information about a suspicious person because that individual leaves evidence, such as fingerprints and footprints. In most cases, a person leaves footprints. Footwear provides a lot of information about a scene and suspects, such as shoe size, description, type, gender, and number of suspects, a direction to and from the crime scene, and even events that happened during this period. A footprint is strong evidence, so officers must isolate the area, avoiding interference from other people’s footprints which are not connected to the crime. Then, after the footwear impressions are located, they are photographed and cast. With a footprint as evidence, we can determine a possible suspect.

In our case, we have a footwear impression, [deleted] cm in length, of a suspect who broke in the professor’s office. Using the information collected CSI shoe data with two variables, such as shoe size and height; we can predict the height of the suspect.

The line on the plot is the least-squares regression line with X values (L1) of shoe sizes and Y values (L2) of heights. The least-squares regression line is
With the shoe size [deleted] cm, we can predict the height of a suspect, which is [work and prediction deleted]. Also, from the data we believe that the suspect is a female. In reality, the person (id number deleted) that we identified as a suspect is closer to [measurement deleted] tall.

The correlation between these two variables, the shoe size and height, is $r=0.69$. It is not strong enough to confirm the height based on shoe size. The square of the correlation, $r^2=0.47$ or 47% shows us that only 47% of the variation in the height comes from the regression on the shoe size. It is not very convincing because there could be involved other variables.