Assignment 7.2

1. Top 3 reasons for the crime in the city
   1. Population
   2. Guns
   3. Low Fertility rate
2. The problem with covariances is that they are hard to compare: when you calculate the covariance of a set of heights and weights, as expressed in (respectively) meters and kilograms, you will get a different covariance from when you do it in other units (which already gives a problem for people doing the same thing with or without the metric system!), but also, it will be hard to tell if (e.g.) height and weight 'covary more' than, say the length of your toes and fingers, simply because the 'scale' the covariance is calculated on is different.

The solution to this is to 'normalize' the covariance: you divide the covariance by something that represents the diversity and scale in both the covariates and end up with a value that is assured to be between -1 and 1: the correlation. Whatever unit your original variables were in, you will always get the same result, and this will also ensure that you can, to a certain degree, compare whether two variables 'correlate' more than two others, simply by comparing their correlation.