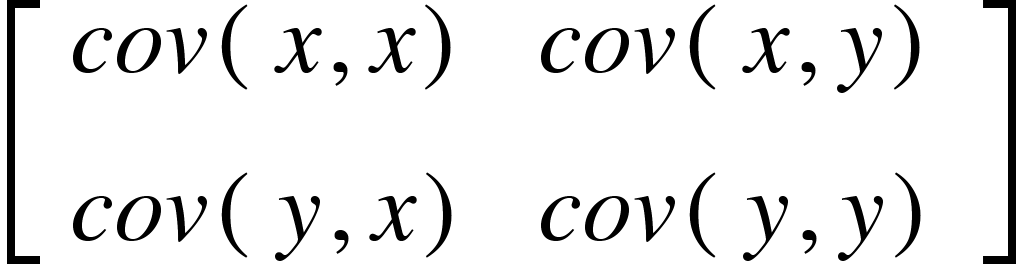
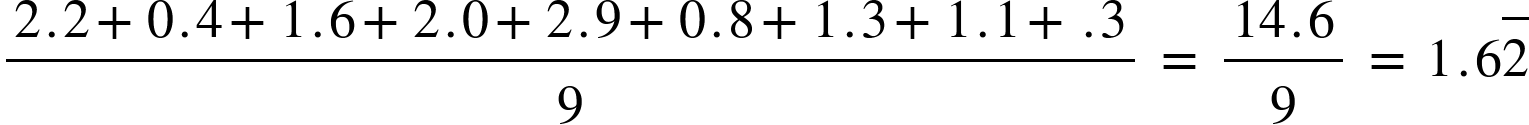
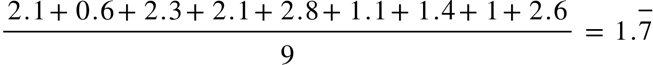
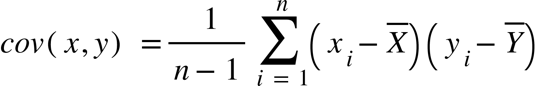
First, we find the covariance matrix of the given matrix. For the given matrix, the covariance matrix will be a 2x2 matrix of the form:



To find the covariances, we need to determine the X with bar on top and Y with bar on top.

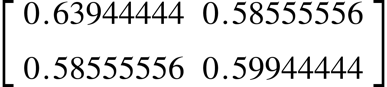
* = 
* = 

Now, we can compute the covariance using this formula:

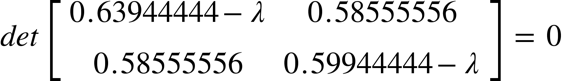


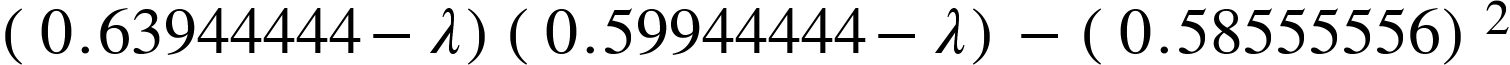
With n being the number of columns.

So, we get this covariance matrix:



Now, we need to compute the eigenvalues and the eigenvectors for the covariance matrix:



This yields a quadratic equation:  = 0 and solving this equation gives us the eigenvalues 1.20534146 and 0.03354743.

The first CPA corresponding to the eigenvectors resulting from the largest eigenvalue so lambda subscript 1 space equals space 1.20534146
open square brackets table row cell 0.63944444 end cell cell 0.58555556 end cell row cell 0.58555556 end cell cell 0.59944444 end cell end table close square brackets open square brackets table row x row y end table close square brackets space equals space lambda subscript 1 open square brackets table row x row y end table close square brackets