Do the following problems in R Markdown and generate a html or word doc.

1. Use the table given below to compute the following problems:

x	1.4	1.6	1.6	2.0	2.0	2.2	2.4	2.6
y	180	184	190	220	186	215	205	240

   a. Use the function sum() to find sum of x.
   b. Use the function mean to find sample mean of both x and y.
   c. Use the function plot(x,y) to draw a scatter plot.
   d. Use the functions sd() and var() to find sample standard deviation and sample variance of x.
   e. Use the function cor() to find coefficient of correlation between x and y.

2. Use following formulae to compute SS_XX, SS_YY, SS_XY, r, β_0 and β_0. You will learn the meaning of these terms later.

   a. SS_XY= $\sum xy - \frac{1}{n}\sum x \sum y$
   b. SS_XX= $\sum x^2 - \frac{1}{n}(\sum x)^2$
   c. SS_YY= $\sum y^2 - \frac{1}{n}(\sum y)^2$
   d. $r = \frac{SS\_XY}{\sqrt{SS_{XX} * SS\_YY}}$
   e. $\hat{\beta}_1 = \frac{SS\_XY}{SS\_XX}$
   f. $\hat{\beta}_0 = \bar{y} - \hat{\beta}_1 * \bar{x}$

      Where $\bar{x}$ *and* $\bar{y}$ *are sample means.*

3. Use the function seq () to create two sequences of numbers such that both sequences have 20 elements.
   a. Use the function matrix() and create two matrices A and B of size 4 by 5 and 5 by 4 respectively.
   b. Find the product AB.
   c. Is matrix A invertible? If yes, find its inverse.
   d. If A is invertible, find the product AA^{-1} .
   e. Find the transpose of A.