Solution for Exam 2001-12 Problem 8

ANYM, 20201110

We consider ***Example 4.24 in the book (page 298)***! From this it is clear that we have 7x2 parameters. We now want to perform a test on a subset of these parameters.

Q 8.1

We use theorem 4.21 on page 295, and need to figure out which **A**, **B** and **C** we should use.

C is the parameter values we want to test, so in this case:

$$\boldsymbol{C} = \begin{bmatrix} 0.3 & 0.4 \\ 0.8 & 0.2 \end{bmatrix}$$

A and **B** are matrices to select the parameters of interest, where B select the columns and A the rows. We have:

$$\boldsymbol{\theta} = \begin{bmatrix} \theta_{11} & \theta_{12} \\ \theta_{21} & \theta_{22} \\ \theta_{31} & \theta_{32} \\ \theta_{41} & \theta_{42} \\ \theta_{51} & \theta_{52} \\ \theta_{61} & \theta_{62} \\ \theta_{71} & \theta_{72} \end{bmatrix}$$

As we need both columns **B** should thus be:

$$\boldsymbol{B} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

And **A** should be:

$$\boldsymbol{A} = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

The answer is thus 5.