

1. Replicate this command file and output. In the output, check for the SPSS page-break icon (□) and delete it. Use the TIMSS dataset.

MATRIX.

Get X / Variables = club, day6, age, self_efy.

```
compute ones = make (nrow(x),1,1).
compute means = T(ones)*X*1/nrow(x).
Compute meanmtx = ones*means.
compute sscpmtx = T(X-meanmtx)*(x-meanmtx).
compute sigma = 1/nrow(x)*sscpmtx.
print sigma.
compute s = inv(mdiag(sqrt(diag(sigma)))).
print s.
compute r = s*sigma*s.
print r.
END MATRIX.
```

Run MATRIX procedure:

```
SIGMA
.1814555556   .0157555556   .0005511111   .0574849289
.0157555556   .9311555556  -.0515688889   .0666425990
.0005511111  -.0515688889   .5151928889   .0039705037
.0574849289   .0666425990   .0039705037   .5288049471

S
2.347550077   .000000000   .000000000   .000000000
.000000000   1.036308071   .000000000   .000000000
.000000000   .000000000   1.393205146   .000000000
.000000000   .000000000   .000000000   1.375156878

R
1.000000000   .038329881   .001802474   .185575701
.038329881   1.000000000  -.074454633   .094971446
.001802474  -.074454633   1.000000000   .007606991
.185575701   .094971446   .007606991   1.000000000

----- END MATRIX -----
```

2. Continue with the previous syntax and complete the following:
 - a. Get Y / variables = scores
 - b. Compute the sums of squares & cross product matrix of x
 - c. Compute the determinant of the sscp matrix
 - d. Compute the inverse of the sscp matrix
 - e. Compute the beta coefficients and print