EPRS8550
Sample Practice Questions

1. A researcher in a company is interested in studying the relationship among the salary of the employees (S), years of experience in the company (E), and a performance rating (R) of the previous year. The only data available are listed below (i.e., no raw data). Values on the diagonal are standard deviations. Off-diagonal values are correlations. The total sample size is 100.

	S	E	R
S	10.00	.70	.50
E		2.00	.35
R			1.00
Means	35.00	15.00	4.0

(Salary is expressed in thousands)

(a) An employee is interested in finding out whether performance rating is anything to do with salary. He, of course, realizes that longer you have worked for the company, the higher the salary. Therefore, he wants to find out the relationship between rating and salary after controlling for the years of experience. Identify the statistics of the interest and calculate the statistic.

2. Create a research question which can be answered using the following statistics. Follow the example. Try to use examples related to your field.

e.g.,
Pearson r

Is there a relationship between the number of teenagers in the house and the telephone usage in minutes?

Multiple correlation

The size of a regression coefficient (slope) when there are multiple predictors

3. Evaluate the following sentence if it is true or false.

(a) $R^2_{y.12} = R^2_{y.21}$

(b) Covariance ranges from -1 to 1.

.

4. Multiple Choice: Suppose there are two predictors (X1 and X2). The partial correlation $r_{y1.2}$ is

(a) larger than or equal to $r_{y1.2(s).}$
(b) smaller than or equal to $r_{y1.2(s)}$.
(c) is larger or smaller than (or equal to) $r_{y1.2(s)}$ depending on the data.

5. Use the SPSS output listed below to answer the following questions:

(a) What is the prediction equation?

(b) What is the value for Pearson r_{xy}?

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        * * * *  M U L T I P L E  R E G R E S S I O N  * * * *

Listwise Deletion of Missing Data

Equation Number 1    Dependent Variable..   Y

Block Number  1.  Method:  Enter     X


Variable(s) Entered on Step Number
   1..    X


Multiple R          .41571
R Square           .17281
Adjusted R Square    .12686
Standard Error     2.44609

Analysis of Variance
                 DF     Sum of Squares     Mean Square
Regression         1          22.50000        22.50000
Residual          18         107.70000         5.98333

F =      3.76045      Signif F =  .0683


---------------------- Variables in the Equation -----------------------

Variable            B       SE B    95% Confdnce Intrvl B      Beta

X             .750000    .386760    -.062553    1.562553    .415705
(Constant)    5.050000   1.282738    2.355068    7.744932


----------- in ------------

Variable         T  Sig T

X            1.939  .0683
(Constant)    3.937  .0010


End Block Number   1   All requested variables entered.
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