Statistics-I. Continuous Evaluation (December 2021). Group ARA

We have the following data file (<https://www.uv.es/mperea/DBM.jasp>) containing various variables from a sample of college students.

1. We have created a brand-new IQ test and we want to see how consistent the scores are across two non-consecutive days (IQ\_score\_day\_1 and IQ\_ score \_day\_2). To that end, we computed the appropriate correlation index. The questions are: (a) What is the value of the correlation coefficient between the IQ scores in Day 1 and Day 2?; (b) Do you think this test is as reliable as one would want from an IQ test?

2. We have a regression equation in which the dependent variable is "high\_school\_grade" and the predictors are “IQ\_test\_day\_1”, “IQ\_test\_day\_2”, and "stress". Please answer the following questions: (a) What proportion of variance of "high school grade" can be explained by the regression equation?; (b) Does the equation suffer heavily from collinearity issues [justify your answer]? (Copy/Paste from JASP)

3. The student K did a multiple-choice exam on consisting of 8 questions, each with 3 alternatives. Assuming that K answered all questions randomly: (1) What is the probability of getting all questions correct?; and (2) What is the probability of getting at least one correct question?

4. We tossed a coin 100 times and we got 55 tails. Using the criterion of Percentile 95, can you conclude that the coin is well balanced? Justify your answer



