

Instructions:

- Use the data UN11.
 - Present the R syntax and (required) output used for every question.
 - Submit your final solutions as a single PDF document in Canvas.
1. Assume that your data set is the entire population of interest, i.e., let $S = \{\text{set of all UN members}\}$ (you can assume all the data entries correspond to all UN members). Let female life expectancy, `lifeExpF`, be the response variable and `fertility` (rounded to the nearest integer) the predictor. Obtain the following results:
 - a) Find the expected value and the variance of `lifeExpF`
 - b) Find the expected value of `lifeExpF` given that `fertility` = i where $i = 1, \dots, 7$.
 - c) Find the variance of `lifeExpF` given that `fertility` = i where $i = 1, \dots, 7$.
 2. From ALR¹ 1.1
 3. From ALR 1.2

¹This acronym will be used to refer to the exercises in our textbook: Applied Linear Regression by S. Weisberg 4th Ed.