**Home assignment 9**

Please, use RStudio for your solution. **Deadline for this HA is 29 November 23:59 Moscow time.**

Name your file as «*Surname\_Name\_HA9*» and put in Yandex folder (<https://disk.yandex.ru/d/D8xcpgNlV-FagQ> )

Part 1

Calculate confidence intervals for mean = 5500. Ignore population size. Keep in mind that now we have sample sd and have to use correction n-1

1. sample sd=3000, alpha=0.05, sample=100

2. sample sd=3000, alpha=0.05, sample=500

3. sample sd=3000, alpha=0.05, sample=1000

4. sample sd=3000, alpha=0.05, sample=10000

5. sample sd=3000, alpha=0.05, sample=20000

6. sample sd=3000, alpha=0.05, sample=50000

7. Create a data.frame which includes all results. You may create objects and use vectors

8. Repeat 1-7 for sd=100

9. Repeat 1-7 for alpha=0.1, sd = 100

10. Draw conclusions of how the width of confidence intervals depends of sample size, confidence level and diversity of the population.

Part 2. In this part you will use some measures from the previous home assignment

1. Select Russia and Sweden using 6 wave of WVS
2. Create an index of generalized trust (strangers, another nationality, another religion).
3. Create an index of particularized trust (known people, neighbors).
4. Use indexes of particularized trust and generalized trust in Russia and Sweden. Calculate means for Russia and Sweden. Calculate confidence intervals for means of particularized and generalized trust. Use alpha = 0.05. Describe interval estimates and draw conclusions about levels of particularized and generalized trust in Russia and Sweden using interval estimates.
5. Use recoded 3 point scales for happiness in Russia and Sweden. Calculate the share of people who are not happy. Calculate confidence intervals using alpha = 0.05. Describe interval estimates in Russia and Sweden and draw conclusions about the level of unhappiness in Russia and Sweden using interval estimates.
6. Calculate the mean level of particularized trust for three groups of happiness in Russia and Sweden. Calculate confidence intervals for each mean using alpha 0.05. Describes interval estimates and draw conclusions on which groups of happiness have higher level of particularized trust using interval estimates.

NB! To do the second part correctly you have to correctly define the group sample size. If you compare groups you have to use group samples for calculations.