Quiz #9

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Create an R-notebook which prints out the answers to the following problems. Knit the Rmd file into a pdf. Upload the pdf of your solutions onto Canvas. All of your work and calculations **must** be done in R.

Problem 1.

The goal of this exercise is to simulate $10,000$ values from the Pareto distribution using the inverse transform method. Then, you are going to draw a histogram of the simulated values.

(4 points) Define the function `pareto.inv.cdf` to be the inverse of the cumulative distribution function of the Pareto distribution.

(1 point) Set the value of the variable `nsim` to be the required number of simulated draws stipulated in the problem statement above.

(1 point) Set particular values of a variables `theta` and `alpha` to be the parameters of the two-parameter Pareto distribution you want to simulate from. The values of the parameters you settle upon are completely up to you.

(2 points) Create the vector `u.s` of `nsim` simulated values from the unit uniform distribution.

(4 points) Set the vector `sims` to contain the `nsim` simulated values from the two-parameter Pareto distribution with the parameters `theta` and `alpha` you defined above. Do **not** print out the simulated values.

(3 points) Using the command `hist`, plot the histogram of the simulated values. Note that you can alter bin sizes by using `breaks` in the `hist` inputs.