
STATISTICAL COMPUTING ACTIVITY

3q: Skill Check

Purpose: The purpose of this activity was to show you how use R to deal with the three continuous random variables we covered in class. You will want to know how to generate random variates, calculate cumulative probabilities, and determine quantiles.

Remember, this is **not** turned in to me. The purpose is for checking that you did gain some understanding from SCA 4a. If you struggle on these, I recommend you return to SCA 4a and work through that again.

The goal is understanding. That's all. If you understand the application of these functions, then you have succeeded. Remember that these SCA are to help you gain skills in using R. Doing these diligently help ensure that analyses are much easier for you.

To Do:

0. Make sure you import the functions for this course using the line:

```
source("http://rfs.kvasaheim.com/stat200.R")
```

1. Let $T \sim \text{Unif}(1,3)$. Calculate $P[T \leq 2.5]$.
2. Produce a histogram of U , where $U \sim \text{Exp}(\lambda = 0.10)$
3. Which of these two random variables has a higher variability, T or U ?
4. Let $X \sim N(\mu=68, \sigma=2)$. Calculate $P[X \leq 72]$ and $P[X \leq 60]$.
5. Let T and X be defined as above. Define $V = \pi TX^2$. In R, this is

$$V = \pi * T * X^2$$

Create a histogram of V . Determine the 2.5th and 97.5th percentiles.