

Week 4 Quiz ****Please Note: No Grace Period****

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The **due date** for this quiz is **Sun 3 Jan 2016 4:30 PM PST**.

- ☐ In accordance with the Coursera Honor Code, I (Hugo Soares) certify that the answers here are my own work.

Question 1

What is produced at the end of this snippet of R code?

```
set.seed(1)
rpois(5, 2)
```

- ☐ A vector with the numbers 3.3, 2.5, 0.5, 1.1, 1.7
- ☐ A vector with the numbers 1, 4, 1, 1, 5
- ☐ A vector with the numbers 1, 1, 2, 4, 1
- ☐ It is impossible to tell because the result is random

Question 2

What R function can be used to generate standard Normal random variables?

- ☐ pnorm
- ☐ qnorm
- ☐ rnorm
- ☐ dnorm

Question 3

When simulating data, why is using the `set.seed()` function important?

- ☐ It ensures that the sequence of random numbers is truly random.



It can be used to specify which random number generating algorithm R should use, ensuring consistency and reproducibility.



It ensures that the random numbers generated are within specified boundaries.



It can be used to generate non-uniform random numbers.

Question 4

Which function can be used to evaluate the inverse cumulative distribution function for the Poisson distribution?



ppois



qpois



dpois



rpois

Question 5

What does the following code do?

```
set.seed(10)
x <- rep(0:1, each = 5)
e <- rnorm(10, 0, 20)
y <- 0.5 + 2 * x + e
```



Generate data from a Poisson generalized linear model



Generate random exponentially distributed data



Generate uniformly distributed random data



Generate data from a Normal linear model

Question 6

What R function can be used to generate Binomial random variables?



dbinom



rbinom

- ☐ qbinom
- ☐ pbinom

Question 7

What aspect of the R runtime does the profiler keep track of when an R expression is evaluated?

- ☐ the package search list
- ☐ the global environment
- ☐ the function call stack
- ☐ the working directory

Question 8

Consider the following R code

```
library(datasets)
Rprof()
fit <- lm(y ~ x1 + x2)
Rprof(NULL)
```

(Assume that y, x1, and x2 are present in the workspace.) Without running the code, what percentage of the run time is spent in the 'lm' function, based on the 'by.total' method of normalization shown in 'summaryRprof()'?

- ☐ 100%
- ☐ 23%
- ☐ It is not possible to tell
- ☐ 50%

Question 9

When using 'system.time()', what is the user time?

- ☐ It is the time spent by the CPU waiting for other tasks to finish
- ☐ It is the time spent by the CPU evaluating an expression
- ☐ It is a measure of network latency

- ☐ It is the "wall-clock" time it takes to evaluate an expression

Question 10

If a computer has more than one available processor and R is able to take advantage of that, then which of the following is true when using 'system.time()'?

- ☐ elapsed time is 0
- ☐ elapsed time may be smaller than user time
- ☐ user time is 0
- ☐ user time is always smaller than elapsed time

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