The "Data Science" Specialization   Learn More   ✕

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

You submitted this quiz on **Mon 11 May 2015 7:16 AM PDT**. You got a score of **10.00** out of **10.00**.

Question 1

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

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

Your Answer		Score	Explanation
○ It is impossible to tell because the result is random			
○ A vector with the numbers 1, 4, 1, 1, 5			
⦿ A vector with the numbers 1, 1, 2, 4, 1	✔	1.00	Because the `set.seed()' function is used, `rpois()' will always output the same vector in this code.
○ A vector with the numbers 3.3, 2.5, 0.5, 1.1, 1.7			
Total		1.00 / 1.00	

Question 2

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

Your Answer	Score	Explanation
○ pnorm		

○ dnorm

● rnorm   ✔   1.00   Functions beginning with the `r' prefix are used to simulate random
                                     variates.

○ qnorm

Total   1.00 /
                 1.00

Question Explanation

Standard probability distributions in R have a set of four functions that can be used to simulate variates,
evaluate the density, evaluate the cumulative density, and evaluate the quantile function.

Question 3

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

Your Answer	Score	Explanation
○ It ensures that the random numbers generated are within specified boundaries.		
○ It can be used to generate non-uniform random numbers.		
● It ensures that the sequence of random numbers starts in a specific place and is therefore reproducible.	✔ 1.00	
○ It ensures that the sequence of random numbers is truly random.		
Total	1.00 / 1.00	

Question 4

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

Your Answer	Score	Explanation

○ ppois

○ dpois

○ rpois

◉ qpois ✔ 1.00 Probability distribution functions beginning with the `q' prefix are used to evaluate the quantile (inverse cumulative distribution) function.

Total   1.00 /
               1.00

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
```

Your Answer	Score	Explanation
○ Generate data from a Poisson generalized linear model		
○ Generate random exponentially distributed data		
◉ Generate data from a Normal linear model ✔	1.00	
○ Generate uniformly distributed random data		
Total	1.00 / 1.00	

Question 6

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

Your Answer	Score	Explanation
○ qbinom		
○ pbinom		

○ dbinom

◉ rbinom   ✔   1.00

Total   1.00 / 1.00

Question 7

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

Your Answer		Score	Explanation
◉ the function call stack	✔	1.00	
○ the working directory			
○ the package search list			
○ the global environment			
Total		1.00 / 1.00	

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()'?

Your Answer		Score	Explanation
◉ 100%	✔	1.00	When using `by.total' normalization, the top-level function (in this case, `lm()') always takes 100% of the time.
○ 23%			

It is not
possible to tell

50%

| Total | 1.00 /
1.00 |

Question 9

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

Your Answer	Score	Explanation
It is the time spent by the CPU waiting for other tasks to finish		
It is the "wall-clock" time it takes to evaluate an expression		
It is a measure of network latency		
It is the time spent by the CPU evaluating an expression	✔ 1.00	
Total	1.00 / 1.00	

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()'?

Your Answer	Score	Explanation
user time is always smaller than elapsed time		
user time is 0		
elapsed time is 0		
elapsed time may be smaller than user time	✔ 1.00	
Total	1.00 / 1.00	