Feedback — Week 4 Quiz

Help

Thank you. Your submission for this quiz was received.

You submitted this quiz on **Tue 24 Jun 2014 5:26 PM CEST**. 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, 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			
A vector with the numbers 1, 4, 1, 1, 5			
Total		1.00 / 1.00	

Question 2

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

Your Answer	Score	Explanation

◉ rnorm	✔	1.00	Functions beginning with the `r' prefix are used to simulate random variates.
○ dnorm			
○ qnorm			
○ pnorm			
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 ensures that the sequence of random numbers is truly random.			
○ 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	
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

dpois			
ppois			
qpois	✔	1.00	Probability distribution functions beginning with the `q' prefix are used to evaluate the quantile function.
rpois			
Total		1.00 / 1.00	

Question 5

What does the following code do?

```
set.seed(10)
x <- rbinom(10, 10, 0.5)
e <- rnorm(10, 0, 20)
y <- 0.5 + 2 * x + e
```

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

Question 6

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

Your Answer	Score	Explanation
pbinom		
dbinom		

qbinom		
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 working directory			
the function call stack	✔	1.00	
the global environment			
the package search list			
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
50%			
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			
Total	1.00 / 1.00		

Question 9

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

Your Answer		Score	Explanation
○ It is the "wall-clock" time it takes to evaluate an expression			
◉ It is the time spent by the CPU evaluating an expression	✔	1.00	
○ It is the time spent by the CPU waiting for other tasks to finish			
○ It is a measure of network latency			
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
○ elapsed time is 0			
○ user time is always smaller than elapsed time			
○ user time is 0			
◉ elapsed time may be smaller than user time	✔	1.00	
Total		1.00 / 1.00	