

## Feedback — Week 4 Quiz

[Help](#)

You submitted this quiz on **Fri 11 Jul 2014 4:45 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
<input type="radio"/> It is impossible to tell because the result is random		
<input type="radio"/> A vector with the numbers 1, 4, 1, 1, 5		
<input type="radio"/> A vector with the numbers 3.3, 2.5, 0.5, 1.1, 1.7		
<input checked="" type="radio"/> 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.
Total	1.00 / 1.00	

### Question 2

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

Your	Score	Explanation
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☐ dnorm

 rnorm		1.00	Functions beginning with the 'r' prefix are used to simulate random variates.
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☐ pnorm

☐ qnorm

Total	1.00 /
	1.00

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.

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

Your Answer	Score	Explanation
<input type="radio"/> It ensures that the sequence of random numbers is truly random.		
<input type="radio"/> It ensures that the random numbers generated are within specified boundaries.		
<input checked="" type="radio"/> It can be used to specify which random number generating algorithm R should use, ensuring consistency and reproducibility.	✓ 1.00	
<input type="radio"/> It can be used to generate non-uniform random numbers.		
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
<input type="radio"/> ppois		
<input type="radio"/> dpois		
<input type="radio"/> rpois		
<input checked="" type="radio"/> qpois	✓ 1.00	Probability distribution functions beginning with the 'q' prefix are used to evaluate the quantile function.
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
<input type="radio"/> Generate data from a Poisson generalized linear model		
<input type="radio"/> Generate random exponentially distributed data		
<input checked="" type="radio"/> Generate data from a Normal linear model	✓ 1.00	
<input type="radio"/> 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
<input type="radio"/> pbinom		
<input type="radio"/> dbinom		
<input checked="" type="radio"/> rbinom	✓ 1.00	
<input type="radio"/> qbinom		
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
<input type="radio"/> the working directory		
<input checked="" type="radio"/> the function call stack	✓ 1.00	
<input type="radio"/> the global environment		
<input type="radio"/> 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
<input checked="" type="radio"/> 100%	✓ 1.00	When using `by.total' normalization, the top-level function (in this case, `lm()') always takes 100% of the time.
<input type="radio"/> 50%		
<input type="radio"/> It is not possible to tell		
<input type="radio"/> 23%		
Total	1.00 / 1.00	

## Question 9

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

Your Answer	Score	Explanation
<input checked="" type="radio"/> It is the time spent by the CPU evaluating an expression	✓ 1.00	
<input type="radio"/> It is a measure of network latency		
<input type="radio"/> It is the "wall-clock" time it takes to evaluate an expression		
<input type="radio"/> It is the time spent by the CPU waiting for other tasks to finish		
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
<input type="radio"/> user time is 0		
<input type="radio"/> elapsed time is 0		
<input type="radio"/> user time is always smaller than elapsed time		
<input checked="" type="radio"/> elapsed time may be smaller than user time	✓ 1.00	
Total	1.00 / 1.00	