

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


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You submitted this quiz on **Tue 30 Dec 2014 5:39 PM PST**. You got a score of **10.00** out of **10.00**. However, you will not get credit for it, since it was submitted past the deadline.

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 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.
<input type="radio"/> A vector with the numbers 3.3, 2.5, 0.5, 1.1, 1.7		
<input type="radio"/> A vector with the numbers 1, 4, 1, 1, 5		
<input type="radio"/> It is impossible to tell because the result is random		
Total	1.00 / 1.00	

Question 2

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

Your Answer	Score	Explanation
<input type="radio"/> pnorm		
<input type="radio"/> dnorm		
<input checked="" type="radio"/> rnorm	✓ 1.00	Functions beginning with the `r` prefix are used to simulate random variates.
<input type="radio"/> 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
<input type="radio"/> It ensures that the random numbers generated are within specified boundaries.		
<input type="radio"/> It ensures that the sequence of random numbers is truly random.		
<input checked="" type="radio"/> It ensures that the sequence of random numbers starts in a specific place and is therefore reproducible.	✓ 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
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☐

dpois

☐

ppois

☒

qpois



1.00

Probability distribution functions beginning with the 'q' prefix are used to evaluate the quantile (inverse cumulative distribution) 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
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☐

Generate random exponentially distributed data

☐

Generate uniformly distributed random data

☒

Generate data from a Normal linear model



1.00

☐ 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
<input type="radio"/> pbinom		
<input type="radio"/> dbinom		
<input type="radio"/> qbinom		
<input checked="" type="radio"/> 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
<input type="radio"/> the working directory		
<input type="radio"/> the package search list		
<input checked="" type="radio"/> the function call stack	✓ 1.00	
<input type="radio"/> 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
<input type="radio"/> It is not possible to tell		
<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"/> 23%		
Total	1.00 / 1.00	

Question 9

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

Your Answer	Score	Explanation
<input type="radio"/> It is a measure of network latency		
<input checked="" type="radio"/> It is the time spent by the CPU evaluating an expression	✓ 1.00	
<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

☐ 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