



Week 4 Quiz



7/10 points earned (70%)

You haven't passed yet. You need at least 80% to pass.

Review the material and try again! You have 3 attempts every 8 hours.

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1 / 1
points

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
- ☐ It is impossible to tell because the result is random
- ☒ A vector with the numbers 1, 1, 2, 4, 1

Correct Response

Because the `set.seed()` function is used, `rpois()` will always output the same vector in this code.



1 / 1
points

2.

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



`rnorm`



Correct Response

Functions beginning with the ``r'` prefix are used to simulate random variates.



`pnorm`



`qnorm`



`dnorm`



0 / 1
points

3.

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



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



Correct Response



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



Incorrect Response



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



Correct Response



It ensures that the sequence of random numbers starts in a specific place and is therefore reproducible.



Correct Response



0 / 1
points

4.

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

- ☐ qpois
- ☐ rpois
- ☐ dpois
- ☒ ppois

Incorrect Response

Probability distribution functions beginning with the `p` prefix are used to evaluate the cumulative distribution function.



1 / 1
points

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 Normal linear model

Correct Response

- ☐ Generate uniformly distributed random data
- ☐ Generate random exponentially distributed data
- ☐ Generate data from a Poisson generalized linear model



1 / 1
points

6.

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



rbinom



Correct Response



dbinom



pbinom



qbinom



1 / 1
points

7.

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



the global environment



the function call stack



Correct Response



the working directory



the package search list



0 / 1
points

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()'?



23%



Incorrect Response



50%



100%



It is not possible to tell



1 / 1
points

9.

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



It is a measure of network latency



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



Correct Response



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



1 / 1
points

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()'?

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

Correct Response

