

# Introduction to Data Science

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## MODULE 4 QUIZ

### Question 1

Using the `iris` data set, which of the following R code statements returns a vector of the means of the variables `Sepal.Length`, `Sepal.Width`, `Petal.Length` and `Petal.Width`?

- (a) `rowMeans(iris[, 1:4])`
- (b) `apply(iris[, 1:4], 1, mean)`
- (c) `apply(iris, 1, mean)`
- (d) `apply(iris, 2, mean)`
- (e) `apply(iris[, 1:4], 2, mean)`**
- (f) `colMeans(iris)`

### Question 2

Given the definition of the vector: `g <- c("M", "F", "F", "I", "M", "M", "F")`, which of the following R code statements will produce the list object shown below?

```
$F
[1] 2 3 7
```

```
$I
[1] 4
```

```
$M
[1] 1 5 6
```

- (a) `split(3, g)`
- (b) `split(1:3, g)`
- (c) `split(1:7, g)`**

(d) None of the above

### Question 3

If you need to generate random numbers based on the normal probability distribution, which of the following would you use?

- (a) `dnorm(10, sd=2)`
- (b) `rnorm(10, 2, 10)`
- (c) `rnorm(n=10, sd=2, mean=10)`**
- (d) `rnorm(10, mean=10)`

### Question 4

If you have the vector `v <- 1:20`, which R statement would you use to take a random sample of 5 items without replacement?

- (a) `sample(v, 5)`**
- (b) `sample(v, 10, replace=FALSE)`
- (c) `sample(v, 5, replace=TRUE)`
- (d) `sample(v[1:10], 5, replace=FALSE)`

### Question 5

Which of the following statements is false when considering the data and time functionality in base R?

- (a) Date values are represented by the `Date` class
- (b) Times are stored internally as the number of seconds since January 1, 1970
- (c) Time values are represented by the `POSIXlt` and `POSIXct` classes
- (d) Say you have a date/time value stored in a character string: "2015/12/8 12:04". You can use `as.POSIXlt()` to store the value as a variable of `Date` class**