R Program Class Quiz 1 - 5 Questions Week 2 08/26/2025

Q1) Given the R code, which of the given options is a possible answer for the vector 'x'.

```
A <- c(1,2,3,4,5,6,7)
x <- sample(A, 5,replace = TRUE)
```

x is (1,3,2,4,7)

x is (1,6,2,4,7)

x is (1,1,2,4,7)

All the given choices

Answer) all choices are correct

replace = TRUE → *sampling with replacement*.
After an element is picked, it is "put back," so it can be picked again.
This allows repeats in the sample.

Q2) Given the R code, which of the given options is ***not a possible*** answer for the vector 'x'.

```
A <- seq(from = 2, to = 20, by = 2)

x <- sample(A, 5)
```

option1) x is (2,8,10,14,16)

option2) x is (2,4,13,14,16)

option3) x is (4,10,12,14,20)

option4) x is (10,12,14,18,20)

Answer) Option 2

Why?

A is the vector of even numbers from 2 to 20.
sample(A, 5) picks 5 distinct ***even*** numbers at random from that set.

Q3) Match the given R function to its correct usage.

unique

#4
1) sorts vector x in increasing order
2) calculates the sum of numbers in a vector
3) sorts vector x in decreasing order
4) **Gives the unique items in a vector**

sum

#2
1) sorts vector x in increasing order
2) **calculates the sum of numbers in a vector**
3) sorts vector x in decreasing order
4) Gives the unique items in a vector

sort(x, decreasing=TRUE)

#3
1) sorts vector x in increasing order
2) calculates the sum of numbers in a vector
3) **sorts vector x in decreasing order**
4) Gives the unique items in a vector

sort(x)

#1

1) **sorts vector x in increasing order**
2) calculates the sum of numbers in a vector
3) sorts vector x in decreasing order
4) Gives the unique items in a vector

Q4) which of the following R code randomly selects 5 numeric numbers between 1 and 10 ?

runif(4, min=1, max=100)

runif(5, min=1, max=10)

runif(5)

runif(5, min=10, max=20)

Answer) runif(5, min = 1, max=10)

Usage of runif in Documentation). runif(n, min = 0, max = 1)

n number of observations. If length(n) > 1, the length is taken to be the number required

min, max lower and upper limits of the distribution. Must be finite

Q5) x <- sample(1:100,200,replace=TRUE)
x is a vector created using the code above. what is the length of vector x ?

100

200

1

None of the given choices

Answer) 200

Description
sample takes a sample of the specified size from the elements of x using either with or without replacement.
Usage
sample(x, size, replace = FALSE, prob = NULL)

sample.int(n, size = n, replace = FALSE, prob = NULL,
useHash = (n > 1e+07 && !replace && is.null(prob) &

Arguments

x	either a vector of one or more elements from which to choose, or a positive integer. See 'Details.'
n	a positive number, the number of items to choose from. See 'Details.'
size	a non-negative integer giving the number of items to choose.
replace	should sampling be with replacement?
prob	a vector of probability weights for obtaining the elements of the vector being sampled.

useHash	logical indicating if the hash-version of the algorithm should be used. Can only be used for replace = FALSE, prob = NULL, and size <= n/2, and really should be used for large n, as useHash=FALSE will use memory proportional to n.