

Quiz on Vectors, Matrices, and Dataframes in R

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Your name : _____

Quiz: Vectors, Matrices, and Dataframes in R

Instructions

Answer all questions. Each question is worth 1 point.

Multiple Choice Questions (MCQs)

1. Which function is used to create a vector in R?

- a) `matrix()`
- b) `vector()`
- c) `data.frame()`
- d) `c()`

2. What will be the result of `length(c(1, 2, 3, 4, 5))`?

- a) 4
- b) 5
- c) 6
- d) 1

3. How can you combine two vectors `a` and `b` into a single vector in R?

- a) `a + b`
- b) `rbind(a, b)`
- c) `c(a, b)`
- d) `combine(a, b)`

4. Which function is used to create a matrix in R?
- a) `vector()`
 - b) `matrix()`
 - c) `data.frame()`
 - d) `mat()`
5. What is the output of `dim(matrix(1:6, nrow = 2))`?
- a) (2, 6)
 - b) (3, 3)
 - c) (2, 3)
 - d) (3, 2)
6. How can you access the element in the second row and third column of a matrix `m`?
- a) `m[2, 3]`
 - b) `m(2, 3)`
 - c) `m[3, 2]`
 - d) `m(3, 2)`
7. What is the default type of a vector created by `c(1, 2, 3)`?
- a) Character
 - b) Logical
 - c) Numeric
 - d) Integer
8. Which function converts a vector into a factor in R?
- a) `factor()`
 - b) `as.factor()`
 - c) `as.vector()`
 - d) `levels()`
9. How do you add a column to a dataframe `df` with a vector `v`?
- a) `df + v`
 - b) `df <- cbind(df, v)`
 - c) `df <- rbind(df, v)`
 - d) `df[v] <- v`
10. Which of the following is TRUE about dataframes in R?
- a) Dataframes can hold different types of data in each column.
 - b) Dataframes can only hold numeric data.
 - c) Dataframes can have only one row.
 - d) All columns in a dataframe must be of the same type.

True or False Questions

11. Vectors in R can only contain numeric data.
 - True
 - False
12. Matrices in R can have both rows and columns of different lengths.
 - True
 - False
13. Dataframes are essentially lists of equal-length vectors.
 - True
 - False
14. In a dataframe, each column must contain data of the same type.
 - True
 - False
15. You can name the rows and columns of a matrix in R.
 - True
 - False

Short Answer Questions

16. Write the R code to create a vector with elements 2, 4, 6, and 8.
 17. Write the R code to create a 3x3 matrix with values from 1 to 9.
 18. How do you convert a matrix `m` to a dataframe in R?
 19. Create a dataframe `df` with two columns: `age` (numeric) and `name` (character) with at least 3 rows.
 20. How can you calculate the sum of all elements in a vector `v`?
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End of Quiz