Unit 2 Quiz A

Randomly select 3 questions to ask members of the group requesting the next set of assignments. If they get all questions correct, give them the entire stack of quizzes and assignments so that they can quiz the next group. If they get any question wrong, send them back to their seats to review and then try again in 10 minutes or more.

1. What is the `c()` function in R and why is it called that? Give an example of how to use `c()`.

   Answer: c() is the combine function - it lets you combine multiple elements into a vector. The 'c' stands for "combine". For example, to create a vector with the numbers 2, 4, and 6, you would write: c(2, 4, 6)

2. If you perform arithmetic operations between two vectors of the same length in R, how does R handle the calculation? Give an example using vector addition.

   Answer: R performs element-wise operations, meaning it matches up the elements in the same positions and performs the operation on each pair. For example, c(1, 2, 3) + c(4, 5, 6) would give us c(5, 7, 9) because 1+4=5, 2+5=7, and 3+6=9.

3. How can you create a vector of consecutive numbers in R without typing out each number? Give an example of how to create a vector containing the numbers 5 through 10.

   Answer: You can use the colon operator (:) to create a sequence of consecutive numbers. To create a vector of numbers 5 through 10, you would write: 5:10. This is equivalent to c(5, 6, 7, 8, 9, 10).

4. How do you find out how many elements are in a vector? What function would you use?

   Answer: You use the length() function to find the number of elements in a vector. It returns a single number. For example, length(c("apple", "banana", "orange")) would return 3.

5. How can you create a vector that repeats certain elements multiple times?

   Answer: You use the rep() function to create a vector with repeated elements.

6. What is the difference between using quotes and not using quotes when creating vectors in R? When do you need to use quotes and when should you avoid them?

   Answer: Quotes are used for character strings (text), while numbers don't need quotes. For example, c("apple", "banana") is correct for text, while c(1, 2, 3) is correct for numbers. Using quotes around numbers will make R treat them as text rather than numerical values, which prevents mathematical operations.