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ECO-634 – Environmental Data Analysis Lab
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R Fundamentals 2

Q1:   n = 12345
       vec_1 = sample(12, n, replace = TRUE)
       head(vec_1)
       vec_1
       vec_2 <- (vec_1 == 3)
       vec_2
       vec_1[vec_2]

Q2: Two reasons why determining which element in vec_1 has a value 3 by visual inspection is a bad idea because it is hard to read the data and keep track of the rows and columns, and if run on different data the values will be different.

Q3: You do not get the same count of 3 when you run the sample () function in R because it samples randomly from the values in the vector. The replace function is set to TRUE meaning that it can choose the same number more than once giving you a different value each time.

Q4: Using a logical test is a safe way to select entries with a value of 3 because you can use it on multiple size vectors and get a correct count every time. This is a quick way to check that vec_1 and vec_2 are always equal.

Q5: Performing logical "by hand" subsetting is bad practice because it is not as concise, it is easy to miss something and make a mistake. It also makes it harder to work with the data quickly, or repeat the logical test if needed, or share it with others.

Q6:
```
for (i in 1:10)
{
  print(paste0("This is loop iteration: ", i))
}
```

Q7:
```
n <- 55
for (i in 1:n)
{
  print(paste0("This is loop iteration: ", i))
}
```

Q8:
```
n = 17
vec_1 = sample(10, n, replace = TRUE)
paste0("The element of vec_1 at index 1: ", sum(vec_1 == 3))
for (i in 1:n)
{
  print(paste0("The element of vec_1 at index: ", i, " is ", vec_1[i]))
}
```

Q9:
```
create_and_print_vec = function(n, min = 1, max = 10)
{
  vec_1 = sample(min : max, n, replace = TRUE)
  paste0("The element of vec_1 at index 1: ", sum(vec_1 == 3))
  for (i in 1:n)
  {
    print(paste0("The element of vec_1 at index: ", i, " is ", vec_1[i]))
  }
}
create_and_print_vec(10, min = 1, max = 10)
```