Week 1 Exercises

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July 9, 2023

Please complete all exercises below WITHOUT using any libraries/packages.

# Exercise 1

Assign 10 to the variable x. Assign 5 to the variable y. Assign 20 to the variable z.

#your code below  
  
x <- 10  
y <- 5  
z <- 20

# Exercise 2

Show that x is less than z but greater than y.

**Note: your output must be a SINGLE boolean, do not output a boolean for each expression.**

#your code below  
  
x < z & x > y

## [1] TRUE

# Exercise 3

Show that x and y do not equal z.

**Note: your output must be a SINGLE boolean, do not output a boolean for each expression.**

#your code here  
  
x & y != z

## [1] TRUE

# Exercise 4

Show that the formula x + 2y = z.

**Note: your output must be a SINGLE boolean**

#your code below  
  
x + 2\*y == z

## [1] TRUE

# Exercise 5

I have created a vector (test\_vector) of integers for you. Determine if any of x, y, or z are in the vector.

**Note: your output must be a SINGLE boolean, do not output a boolean for each expression.**

test\_vector <- c(1,5,11:22)  
#your code below  
  
x & y & z %in% test\_vector

## [1] TRUE

# Exercise 6

Show which value is contained in the test vector. To do this you will need to create an element-wise logical vector using operators. x == vector. Once you have done that you will need to use slicing to return all indices that have matches. **Note: your output should be two integers**

#your code below  
  
y == test\_vector

## [1] FALSE TRUE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE  
## [12] FALSE FALSE FALSE

z == test\_vector

## [1] FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE  
## [12] TRUE FALSE FALSE

y[y==y]

## [1] 5

z[z==z]

## [1] 20