Homework Week 1 DSE5002

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Exercise 1

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

```
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.

```
print(y < x & x < z)
```

```
## [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.

```
print(x + y == z)
```

```
## [1] FALSE
```

Exercise 4

Show that the formula $x + 2y = z$. Note: your output must be a SINGLE boolean.

```
print(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)

```
test_vector <- c(1,5,11:22)

print(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.

```
#Use which function and the OR operator embedded within to check indices
#of each variable in comparison to the vector. Result = 2, 12
which(x==test_vector | y==test_vector | z==test_vector)
```

```
## [1]  2 12
```