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DAT511, Homework 1

> #2.2.1a

> i

[1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

> sum(i^2)

[1] 42925

>

> #2.2.1b

> j = 6:75

> mean(j)

[1] 40.5

>

> #2.2.1c

> #I honestly can't figure out how to construct a vector using a single command without using c(). I can append things one at a time but that wouldn't be a single command. I'm not sure how recycling would take this into play, as the question hint suggests.

>

> #2.2.2

> x = c(1L, 2L, 7L)

> y = 2\*x

> class(x)

[1] "integer"

> class(y)

[1] "numeric"

> #It appears that since I multiplied the numeric type value "2" to the integer values of 1, 2, and 7, the class was converted to numeric instead of integer. I'm assuming this is to avoid type issues when doing math using real numbers and integers, it just converts it.

>

> #2.3.3

> library("datasets")

> data("women")

> heightM = women$height \* 2.54

> weightKg = women$weight / 2.2046

> heightM = heightM / 100

> women$heightM = heightM

> women$weightKg = weightKg

> QI = weightKg / (heightM ^ 2)

> women$QI = QI

> mean(women$QI)

[1] 22.72691

> median(women$QI)

[1] 22.46518

> sum(women$QI > 23)

[1] 5

>

> #2.3.4a

> data("iris")

> sum(iris$Petal.Length > 5 & iris$Sepal.Width < 3)

[1] 15

>

> #2.3.4b

> iris[ (iris$Sepal.Length == 5.7 & iris$Sepal.Width == 2.8), 'Species', drop = FALSE]

Species

56 versicolor

100 versicolor

>

> #2.3.4c

> max(iris$Sepal.Length)

[1] 7.9

> iris[iris$Sepal.Length == 7.9, 'Species', drop = FALSE]

Species

132 virginica

>

> #The instructions list to complete 2.3.4 twice, I'm assuming 2.3.5 was the intended final question

> #2.3.5

> winmean = iris$Sepal.Length

> winmean[winmean > 7] = 7

> mean(winmean)

[1] 5.805333