Homework 3

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library(tidyverse)

## ── Attaching packages ─────────────────────────────────────── tidyverse 1.3.2 ──  
## ✔ ggplot2 3.3.6 ✔ purrr 0.3.4  
## ✔ tibble 3.1.8 ✔ dplyr 1.0.9  
## ✔ tidyr 1.2.0 ✔ stringr 1.4.1  
## ✔ readr 2.1.2 ✔ forcats 0.5.2  
## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()

library(dplyr)  
Vector1 <- (c( 10, 19, 121, 83, 63, 7, 77, 61, 51, 97, 123, 41))  
Vector1

## [1] 10 19 121 83 63 7 77 61 51 97 123 41

## Question 1

Vector1[c(1,12)]

## [1] 10 41

Vector1[-c(2,3,4,5,6,7,8,9,10,11)]

## [1] 10 41

## Question 2

Vector1[Vector1 < 60]

## [1] 10 19 7 51 41

for(i in Vector1){  
 if(i < 60){  
 print(i)  
 }  
}

## [1] 10  
## [1] 19  
## [1] 7  
## [1] 51  
## [1] 41

## Question 3

Vector1[Vector1 %% 2 != 0 & Vector1 %% 3 != 0]

## [1] 19 121 83 7 77 61 97 41

for(i in Vector1){  
 if(i %% 3 != 0 & i %% 2 != 0){  
 print(i)  
 }  
}

## [1] 19  
## [1] 121  
## [1] 83  
## [1] 7  
## [1] 77  
## [1] 61  
## [1] 97  
## [1] 41

## Question 4

is.na(Vector1)

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

Vector1[Vector1=="NA"]

## numeric(0)

## Question 5

myList <- list(TRUE, 12.35, "pear", 48, c = 3:8, list(23, "team"))  
str(myList[[3]])

## chr "pear"

## Question 6

myList[1:3]

## [[1]]  
## [1] TRUE  
##   
## [[2]]  
## [1] 12.35  
##   
## [[3]]  
## [1] "pear"

## Question 7

myList <- list(TRUE, 12.35, k = "pear", 48, c = 3:8, list(23, "team"))  
myList$k

## [1] "pear"

## Question 8

quad <- function(a, b, c){  
 x1 <- ((b \* -1) + sqrt(b^2 - (4\*a\*c)))/(2\*a)  
 x2 <- ((b \* -1) - sqrt(b^2 - (4\*a\*c)))/(2\*a)  
 print(paste("roots are", x1, "and", x2))  
}  
#equation 1  
quad(1,-3,-28)

## [1] "roots are 7 and -4"

#equation 2  
quad(1,1,-30)

## [1] "roots are 5 and -6"

#Question 3  
quad(3,14,8)

## [1] "roots are -0.666666666666667 and -4"

#question 4  
quad(2,11,0)

## [1] "roots are 0 and -5.5"

## Question 9

tb <- tibble(x = 1:10, y = 10:1, z = y/2)  
tb

## # A tibble: 10 × 3  
## x y z  
## <int> <int> <dbl>  
## 1 1 10 5   
## 2 2 9 4.5  
## 3 3 8 4   
## 4 4 7 3.5  
## 5 5 6 3   
## 6 6 5 2.5  
## 7 7 4 2   
## 8 8 3 1.5  
## 9 9 2 1   
## 10 10 1 0.5

## Question 10

tb %>%  
 map\_dbl(IQR)

## x y z   
## 4.50 4.50 2.25