#1. The table below shows the data about shoe size and height. Create a data frame.

shoe_size <- c(6.5, 9.0, 8.5, 8.5, 10.5, 7.0, 9.5, 9.0, 13.0, 7.5, 10.5, 8.5, 12.0, 10.5, 13.0, 11.5, 8.5, 5.0, 10.0, 6.5, 7.5, 8.5, 10.5, 8.5 ,10.5, 11.0, 9.0, 13.0) height <- c(66.0, 68.0, 64.5, 65.0, 70.0, 64.0, 70.0, 71.0, 72.0, 64.0, 74.5, 67.0, 71.0, 71.0, 77.0, 72.0, 59.0, 62.0, 72.0, 66.0, 64.0, 67.0, 73.0, 69.0, 72.0, 70.0,69.0,70.0) gender <- c("F","F","F","F","M","F","F","F","M","F","M","F","M","M","M","M","F","F","M","F","F","M","M","F","M","M","M","

Create a data frame

data <- data.frame(ShoeSize = shoe_size, Height = height, Gender = gender)

#a. Describe the data. summary(data)

#b. Create a subset by males and females with their corresponding shoe size and height. #What its result? Show the R scripts.

males <- data[data$Gender == ”M”, c(”Gender”, ”ShoeSize”, ”Height”)]females < -data[data$Gender == "F", c("Gender", "ShoeSize", "Height")]

males females

#c. Find the mean of shoe size and height of the respondents. Write the R scripts and it result. mean_shoe_size <- mean(data$ShoeSize)mean_height < -mean(data$Height)

mean_shoe_size mean_height

#d. Is there a relationship between shoe size and height? Why? #No, In my opinion it doesn't affect shoe size to height and vice versa in growing up. correlation <- cor(data$ShoeSize, data$Height) correlation

#2. Create a character vector of months months <- c("March", "April", "January", "November", "January", "September", "October", "September", "November", "August", "January", "November", "November", "February", "May", "August", "July", "December", "August", "August", "September", "November", "February", "April")

```
factor_months_vector <- factor(months)
```

```
print(factor_months_vector)
```

```
levels(factor_months_vector)
```

#3 summary

```
# character vector
summary(months)

# the factor
summary(factor_months_vector)
```

#4 Create a vector and factor

```
direction_vector <- c("north", "east", "west")
frequency_vector <- c(1, 4, 3)

factor_data <- factor(direction_vector, levels = c("east", "west", "north"))
print(factor_data)
```

#6 selected_number <- sample(1:50, 1)

```
paste("Chosen Number:", selected_number, "\n")
```

```
if (selected_number < 1 || selected_number > 50) {
```

```
  cat("The number selected is beyond the range of 1 to 50\n")
} else {

  if (selected_number == 20) {
    cat("TRUE\n")
  } else {
    cat(selected_number, "\n")
  }
}
```