WorkSheet2

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```
#1. Ceate a vector using : operator
#1a. Sequence from -5 to 5. Write the R code and its output. Describe its output.
Num <- seq(-5,5)
Num
```

```
##  [1] -5 -4 -3 -2 -1  0  1  2  3  4  5
```

```
#1b. x <- 1:7. What will be the value of x?
#answer: The value of x is numbers form 1 to 7
q<- 1:7
q
```

```
## [1] 1 2 3 4 5 6 7
```

```
#2. Create a vector using seq() function
#2a. seq(1, 3, by=0.2) # specify step size Write the R code and its output. Describe the output.
Mike <- seq(1, 3, by= 0.2)
Mike
```

```
##  [1] 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0
```

```
#Describe the output: The output displays numbers form 1 to 3 by 0.2
```

```
#3.A factory has a census of its workers. There are 50 workers in total. The following
#list shows their ages: 34, 28, 22, 36, 27, 18, 52, 39, 42, 29, 35, 31, 27,
#22, 37, 34, 19, 20, 57, 49, 50, 37, 46, 25, 17, 37, 43, 53, 41, 51, 35,
#24,33, 41, 53, 40, 18, 44, 38, 41, 48, 27, 39, 19, 30, 61, 54, 58, 26,18.

Age <- c(34,28,22,36,27,18,52,39,42,29,35,31,27,
         22, 37, 34, 19, 20, 57, 49, 50, 37, 46, 25, 17, 37, 43, 53, 41, 51, 35,
         24,33, 41, 53, 40, 18, 44, 38, 41, 48, 27, 39, 19, 30, 61, 54, 58, 26,18)

#a. Access 3rd element, what is the value?
Age[3]
```

```
## [1] 22
```

```r
#b. Access 2nd and 4th element, what are the values?
Age[2]
```

```
## [1] 28
```

```r
Age[4]
```

```
## [1] 36
```

```r
#c. Access all but the 1st element is not included. Write the R code and its output.
Age[2:49]
```

```
##  [1] 28 22 36 27 18 52 39 42 29 35 31 27 22 37 34 19 20 57 49 50 37 46 25 17 37
## [26] 43 53 41 51 35 24 33 41 53 40 18 44 38 41 48 27 39 19 30 61 54 58 26
```

```r
#4.*Create a vector x <- c("first"=3, "second"=0, "third"=9). Then named the vector,names(x).
x <- c("first"=3, "second"=0, "third"=9)
names(x)
```

```
## [1] "first"  "second" "third"
```

```r
#a. Print the results. Then access x[c("first", "third")].Describe the output
x[c("first", "third")]
```

```
## first third
##     3     9
```

```r
##Describe the output: the output it displays two lines,
##the first line it contains and displays  first and third
##while on the second line it displays 3 and 9.
```

```r
#5 Create a sequence x from -3:2.
y <- c(-3:32)
y
```

```
##  [1] -3 -2 -1  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21
## [26] 22 23 24 25 26 27 28 29 30 31 32
```

```r
#a. Modify 2nd element and change it to 0;
y[2] <- 0
y
```

```
##  [1] -3  0 -1  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21
## [26] 22 23 24 25 26 27 28 29 30 31 32
```

```r
##Describe the output: the -2 output was replaced by zero as a second element.
```

```r
#6.*The following data shows the diesel fuel purchased by Mr. Cruz.
#a. Create a data frame for month, price per liter (php) and purchase-quantity (liter).
#Write the codes.
Month <- c("Jan", "Feb", "March", "Apr", "May", "June")
Month
```

```
## [1] "Jan"   "Feb"   "March" "Apr"   "May"   "June"
```

```r
Price <- c(52.50, 57.25, 60.00, 65.00, 74.25, 54.00)
Price
```

```
## [1] 52.50 57.25 60.00 65.00 74.25 54.00
```

```r
Quantity <- c(25, 30, 40, 50, 10, 45)
data_frame <- data.frame(Month, Price, Quantity)
data_frame
```

```
##   Month Price Quantity
## 1   Jan 52.50       25
## 2   Feb 57.25       30
## 3 March 60.00       40
## 4   Apr 65.00       50
## 5   May 74.25       10
## 6  June 54.00       45
```

```r
#b. What is the average fuel expenditure of Mr. Cruz from Jan to June? Note: Use
#weighted.mean(liter, purchase)

weighted.mean(Price,Quantity)
```

```
## [1] 59.2625
```

```r
#7.
##code
data <- c(length(rivers), sum(rivers), mean(rivers), median(rivers), var(rivers),
sd(rivers), min(rivers), max(rivers))
data
```

```
## [1]    141.0000  83357.0000    591.1844    425.0000 243908.4086    493.8708
## [7]    135.0000   3710.0000
```

```r
#8.a
Ranking <- 1:25
Celebrity <- c("Tom Cruise", "Rolling Stones", "Oprah Winfrey", "U2",
                   "Tiger Woods", "Steven Spielberg", "Howard Stern", "50 Cent", "Cast of the sopranos"
                   "Dan Brown", "Bruce Springsteen", "Donald Trump", "Muhammad Ali", "Paul McCartney",
                   "George Lucas", "Elton John", "David Letterman", "Phil Mickelson", "J.K Rowling",
                   "Bradd Pitt", "Peter Jackson", "Dr. Phil McGraw", "Jay Lenon", "Celine Dion", "Kobe
Pay <- c(67, 90, 225, 110, 90, 332, 302, 41, 52, 88, 55, 44, 55, 40,
         233, 34, 40, 47, 75, 25, 39, 45, 32, 40, 31)

Data_Ranking <- data.frame(Ranking, Celebrity, Pay)
Data_Ranking
```

```
##    Ranking            Celebrity Pay
## 1        1          Tom Cruise  67
## 2        2      Rolling Stones  90
## 3        3       Oprah Winfrey 225
## 4        4                 U2 110
## 5        5         Tiger Woods  90
## 6        6    Steven Spielberg 332
## 7        7        Howard Stern 302
## 8        8            50 Cent  41
## 9        9 Cast of the sopranos  52
## 10      10           Dan Brown  88
## 11      11   Bruce Springsteen  55
## 12      12        Donald Trump  44
## 13      13        Muhammad Ali  55
## 14      14      Paul McCartney  40
## 15      15        George Lucas 233
## 16      16          Elton John  34
## 17      17     David Letterman  40
## 18      18      Phil Mickelson  47
## 19      19         J.K Rowling  75
## 20      20          Bradd Pitt  25
## 21      21       Peter Jackson  39
## 22      22     Dr. Phil McGraw  45
## 23      23           Jay Lenon  32
## 24      24         Celine Dion  40
## 25      25         Kobe Bryant  31
```

```
#b
Ranking [19] <- 15
Ranking
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 15 20 21 22 23 24 25
```

```
Pay [19] <- 90
Pay
```

```
##  [1]  67  90 225 110  90 332 302  41  52  88  55  44  55  40 233  34  40  47  90
## [20]  25  39  45  32  40  31
```

```
Ranking <- data.frame(Ranking, Celebrity, Pay)
Ranking
```

```
##    Ranking            Celebrity Pay
## 1        1          Tom Cruise  67
## 2        2      Rolling Stones  90
## 3        3       Oprah Winfrey 225
## 4        4                 U2 110
## 5        5         Tiger Woods  90
## 6        6    Steven Spielberg 332
## 7        7        Howard Stern 302
## 8        8            50 Cent  41
## 9        9 Cast of the sopranos  52
```

```
## 10      10            Dan Brown  88
## 11      11    Bruce Springsteen  55
## 12      12         Donald Trump  44
## 13      13         Muhammad Ali  55
## 14      14       Paul McCartney  40
## 15      15         George Lucas 233
## 16      16           Elton John  34
## 17      17      David Letterman  40
## 18      18       Phil Mickelson  47
## 19      15          J.K Rowling  90
## 20      20           Bradd Pitt  25
## 21      21        Peter Jackson  39
## 22      22      Dr. Phil McGraw  45
## 23      23            Jay Lenon  32
## 24      24          Celine Dion  40
## 25      25          Kobe Bryant  31
```

```
#c interpret the data
#answer:
##J.K.'s power position and pay have been changed.
##power ranking to 15 and pay to 90, Rowling.
##As a result, I only altered J.K. Rowling's power rating (19) and salary
##(75); however, I left George Lucas' power ranking and pay unchanged.
```