RWorkheet_nandin#1.Rmd

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1. Set up a vector named age, consisting of 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, 42, 53, 41, 51, 35, 24, 33, 41

a. How many data points? 34

b. Write the R code and its output.

```r
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
length(age)
```

```
## [1] 34
```

2. Find the reciprocal of the values for age. Write the R code and its output.

```r
library(MASS)
fractions(reciprocal_age <- 1 / age)
```

```
##  [1] 1/34 1/28 1/22 1/36 1/27 1/18 1/52 1/39 1/42 1/29 1/35 1/31 1/27 1/22 1/37
## [16] 1/34 1/19 1/20 1/57 1/49 1/50 1/37 1/46 1/25 1/17 1/37 1/42 1/53 1/41 1/51
## [31] 1/35 1/24 1/33 1/41
```

3. Assign also new_age <- c(age, 0, age). What happen to the new_age?

```r
new_age <- c(age, 0, age)
print(new_age)
```

```
##  [1] 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
## [26] 37 42 53 41 51 35 24 33 41  0 34 28 22 36 27 18 52 39 42 29 35 31 27 22 37
## [51] 34 19 20 57 49 50 37 46 25 17 37 42 53 41 51 35 24 33 41
```

4. Sort the values for age. Write the R code and its output.

```r
sort(age)
```

```
##  [1] 17 18 19 20 22 22 24 25 27 27 28 29 31 33 34 34 35 35 36 37 37 37 39 41 41
## [26] 42 42 46 49 50 51 52 53 57
```

5. Find the minimum and maximum value for age. Write the R code and its output.

```r
min(age)
```

```
## [1] 17
```

```r
max(age)
```

```
## [1] 57
```

6. Set up a vector named data, consisting of 2.4, 2.8, 2.1, 2.5, 2.4, 2.2, 2.5, 2.3, 2.5, 2.3, 2.4, and 2.7.

a. How many data points?

b. Write the R code and its output.

```r
data <- c (2.4, 2.8, 2.1, 2.5, 2.4, 2.2, 2.5, 2.3, 2.5, 2.3, 2.4, 2.7)
length(data)
```

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

7. Generates a new vector for data where you double every value of the data. | What happen to the data?

```r
data <- data * 2
data
```

```
##  [1] 4.8 5.6 4.2 5.0 4.8 4.4 5.0 4.6 5.0 4.6 4.8 5.4
```

8. Generate a sequence for the following scenario: 8.1 Integers from 1 to 100.

8.2 Numbers from 20 to 60 *8.3 Mean of numbers from 20 to 60* 8.4 Sum of numbers from 51 to 91 *8.5 Integers from 1 to 1,000 a. How many data points from 8.1 to 8.4?__________

b. Write the R code and its output from 8.1 to 8.4.

c. For 8.5 find only maximum data points until 10.

```r
integers_1_to_100 <- 1:100
length(integers_1_to_100)
```

```
## [1] 100
```

```r
numbers_from_20_to_60 <- 20:60
length(numbers_from_20_to_60)
```

```
## [1] 41
```

```r
mean_20_to_60 <- mean(numbers_from_20_to_60)
print(mean_20_to_60)
```

```
## [1] 40
```

```r
numbers_51_to_91 <- 51:91
sum_51_to_91 <- sum(numbers_51_to_91)
print(sum_51_to_91)
```

```
## [1] 2911
```

9. *Print a vector with the integers between 1 and 100 that are not divisible by 3, 5 and 7 using filter option. Filter(function(i) { all(i %% c(3,5,7) != 0) }, seq(100)) Write the R code and its output.

```r
Filter(function(i) { all(i %% c(3,5,7) != 0) }, seq(100))
```

```
##  [1]  1  2  4  8 11 13 16 17 19 22 23 26 29 31 32 34 37 38 41 43 44 46 47 52 53
## [26] 58 59 61 62 64 67 68 71 73 74 76 79 82 83 86 88 89 92 94 97
```

10. Generate a sequence backwards of the integers from 1 to 100. Write the R code and its output.

```r
rev(seq(1:100))
```

```
##   [1] 100  99  98  97  96  95  94  93  92  91  90  89  88  87  86  85  84  83
##  [19]  82  81  80  79  78  77  76  75  74  73  72  71  70  69  68  67  66  65
##  [37]  64  63  62  61  60  59  58  57  56  55  54  53  52  51  50  49  48  47
##  [55]  46  45  44  43  42  41  40  39  38  37  36  35  34  33  32  31  30  29
##  [73]  28  27  26  25  24  23  22  21  20  19  18  17  16  15  14  13  12  11
##  [91]  10   9   8   7   6   5   4   3   2   1
```