1] "Question 1. What are the column names of the data frame?"

[1] "Ozone" "Solar.R" "Wind" "Temp" "Month" "Day"

[1] "Question 2. What are the row names of the data frame?"

[1] "1" "2" "3" "4" "5" "6" "7" "8" "9" "10" "11" "12"

[13] "13" "14" "15" "16" "17" "18" "19" "20" "21" "22" "23" "24"

[25] "25" "26" "27" "28" "29" "30" "31" "32" "33" "34" "35" "36"

[37] "37" "38" "39" "40" "41" "42" "43" "44" "45" "46" "47" "48"

[49] "49" "50" "51" "52" "53" "54" "55" "56" "57" "58" "59" "60"

[61] "61" "62" "63" "64" "65" "66" "67" "68" "69" "70" "71" "72"

[73] "73" "74" "75" "76" "77" "78" "79" "80" "81" "82" "83" "84"

[85] "85" "86" "87" "88" "89" "90" "91" "92" "93" "94" "95" "96"

[97] "97" "98" "99" "100" "101" "102" "103" "104" "105" "106" "107" "108"

[109] "109" "110" "111" "112" "113" "114" "115" "116" "117" "118" "119" "120"

[121] "121" "122" "123" "124" "125" "126" "127" "128" "129" "130" "131" "132"

[133] "133" "134" "135" "136" "137" "138" "139" "140" "141" "142" "143" "144"

[145] "145" "146" "147" "148" "149" "150" "151" "152" "153"

[1] "Question 3. Extract the first 6 rows of the data frame and print them to the console"

Ozone Solar.R Wind Temp Month Day

1 41 190 7.4 67 5 1

2 36 118 8.0 72 5 2

3 12 149 12.6 74 5 3

4 18 313 11.5 62 5 4

5 NA NA 14.3 56 5 5

6 28 NA 14.9 66 5 6

[1] "Question 4. How many observations (i.e. rows) are in this data frame?"

[1] 153

[1] "Question 5. Extract the last 6 rows of the data frame and print them to the console"

Ozone Solar.R Wind Temp Month Day

148 14 20 16.6 63 9 25

149 30 193 6.9 70 9 26

150 NA 145 13.2 77 9 27

151 14 191 14.3 75 9 28

152 18 131 8.0 76 9 29

153 20 223 11.5 68 9 30

[1] "Question 6. How many missing values are in the “Ozone” column of this data frame?"

[1] 37

[1] "Question 7. What is the mean of the “Ozone” column in this dataset? Exclude missing values (coded as NA) from this calculation."

[1] 0.7581699

[1] "Question 8. Extract the subset of rows of the data frame where Ozone values are above 31 and Temp values are above 90."

Ozone Solar.R Wind Temp Month Day

69 97 267 6.3 92 7 8

70 97 272 5.7 92 7 9

120 76 203 9.7 97 8 28

121 118 225 2.3 94 8 29

122 84 237 6.3 96 8 30

123 85 188 6.3 94 8 31

124 96 167 6.9 91 9 1

125 78 197 5.1 92 9 2

126 73 183 2.8 93 9 3

127 91 189 4.6 93 9 4

[1] "Question 9. Use a for loop to create a vector of length 6 containing the mean of each column in the data frame (excluding all missing values)."

[1] 0.7581699

[1] 0.9542484

[1] 1

[1] 1

[1] 1

[1] 1

[1] "Question 10. Use the apply function to calculate the standard deviation of each column in the data frame (excluding all missing values)."

Ozone Solar.R Wind Temp Month Day

0.4295981 0.2096322 0.0000000 0.0000000 0.0000000 0.0000000

[1] "Question 11. Calculate the mean of “Ozone” for each Month in the data frame and create a vector containing the monthly means (exclude all missing values)."

[1] 0.9516129 0.8833333 0.9731183 0.9569892 0.9944444

[1] "Question 12. Draw a random sample of 5 rows from the data frame"

Ozone Solar.R Wind Temp Month Day

99 122 255 4.0 89 8 7

14 14 274 10.9 68 5 14

103 NA 137 11.5 86 8 11

22 11 320 16.6 73 5 22

79 61 285 6.3 84 7 18

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