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## Question: I really need the answer to question e ! Please do it in r markd...

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You can access datasets from the R datasets package by using

```
data(NAME_OF_DATASET)
```

For this question, we will use the diamonds data from the ggplot2 library.

```
library(tidyverse) # Note the tidyverse package loads the ggplot2 library
data(diamonds)
```

Note you can learn about this dataset by using

```
help(diamonds)
```

- Determine the (i) mode and (ii) class of the `diamonds` data object.
- How would you find how many rows and columns the object has by using R functions `nrow` and `ncol` ? Give the code and the result.
- What is the value contained in row 12345 and the `depth` column (which contains the depth percentage)?
- Write a line of code that creates a new data object called `diamonds_imp` which is of the same mode and class as the original `diamonds` data object and contains the same columns as the original, but also contains three new columns: `x_imp`, `y_imp`, `z_imp` where each of these measurements are Imperial measurements in inches, i.e. `x_imp` is equal to `x` divided by 25.4, as there are 25.4 mm in 1 inch. Show the first 6 rows of the resulting data object.
- Write a line of code that adds a column named `over_under` to the `diamonds_imp` data object that contains the difference between the price of the diamond in that row and the `median` of the prices of other diamonds with the same `color`.
- Write a line of code that creates a new data object from the original `diamonds` data object named `Expensive` that contains only the diamonds whose price is *strictly* greater than \$18800 and show the contents of that data object.

I really need the answer to question e !

Please do it in r markdown if you can,

Thanks

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## Expert Answer



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11 answers

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1  
2 title: "Chegg"  
3 author: "ABC"  
4 date: "24/09/2021"  
5 output: html\_document  
6  
7  
8 ---  
9 [r setup, include=FALSE]  
10 library(tidyverse)  
11 data(diamonds)  
12  
13 # a.  
14 ---  
15 [r]  
16 # c()  
17 mode(diamonds)  
18 # (i)  
19 class(diamonds)  
20  
21  
22 [1] "list"  
[1] "tbl\_df" "tbl" "data.frame"

21  
22 # b.  
23 ---  
24 [r]  
25 # number of rows  
26 nrow(diamonds)  
27  
28 [1] 53940  
[1] 10

30  
31 # c.  
32 ---  
33 [r]  
34 diamonds[12345,1:depth]  
35  
36 [1] 64.5

36  
37 # d.  
38 ---  
39 [r]  
40 diamonds\_imp <- diamonds  
41 diamonds\_imp\$х\_imp <- diamonds\$х/25.4  
42 diamonds\_imp\$у\_imp <- diamonds\$у/25.4  
43 diamonds\_imp\$z\_imp <- diamonds\$z/25.4  
44  
45 head(diamonds\_imp)

carat	cut	color	clarity	depth	table	price	x	y	z
0.23	Ideal	E	S12	61.5	55	326	3.95	3.98	2.43
0.21	Premium	E	S11	59.8	61	326	3.89	3.84	2.31
0.23	Good	E	VS1	56.9	65	327	4.05	4.07	2.31
0.29	Premium	I	VS2	62.4	58	334	4.20	4.23	2.63
0.31	Good	J	S12	63.3	58	335	4.34	4.35	2.75
0.24	Very Good	J	VVS2	62.8	57	336	3.94	3.96	2.48

6 rows | 1-10 of 13 columns

47  
48 # e.  
49 ---  
50 [r]  
51 over\_under <- c()  
52 for (i in 1:nrow(diamonds\_imp))  
53 { d\_delete <- diamonds\_imp[-i,] # data without the ith row so that we can take the median prices of other diamonds with the same colour,  
54 # excluding the price of the ith diamond  
55 over\_under[i] <- diamonds\_imp\$price[i] - median(d\_delete[d\_delete\$color==diamonds\_imp\$color[i],]\$price)}  
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39-  
40 diamonds\_imp <- diamonds  
41 diamonds\_imp\$x\_imp <- diamonds\$х/25.4  
42 diamonds\_imp\$y\_imp <- diamonds\$y/25.4  
43 diamonds\_imp\$z\_imp <- diamonds\$z/25.4  
44 # displaying the first 6 rows  
45 head(diamonds\_imp)  
46-

clarity	depth	table	price	x	y	z	x_imp	y_imp	z_imp
S12	61.5	55	326	3.95	3.98	2.43	0.1555118	0.1566929	0.09566929
S11	59.8	61	326	3.89	3.84	2.31	0.1531496	0.1511811	0.09094488
VSI	56.9	65	327	4.05	4.07	2.31	0.1594488	0.1602362	0.09094488
VS2	62.4	58	334	4.20	4.23	2.63	0.1653543	0.1665354	0.10354331
S12	63.3	58	335	4.34	4.35	2.75	0.1708661	0.1712598	0.10826772
VVS2	62.8	57	336	3.94	3.96	2.48	0.1551181	0.1559055	0.09763780

6 rows | 4-13 of 13 columns

47-  
48- # e.  
49-  
50-  
51- over\_under <- c()  
52- for(i in 1:nrow(diamonds\_imp))  
53- { d\_delete <- diamonds\_imp[-i,] # data without the ith row so that we can take the median prices of other diamonds with the same colour,  
54- excluding the price of the ith diamond  
55- over\_under[i] <- diamonds\_imp\$price[i] - median(d\_delete[d\_delete\$color==diamonds\_imp\$color[i],]\$price)}  
56-  
57-  
58-

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Project: (None)

Untitled1\* x Untitled2\* x

39-  
40 diamonds\_imp <- diamonds  
41 diamonds\_imp\$x\_imp <- diamonds\$х/25.4  
42 diamonds\_imp\$y\_imp <- diamonds\$y/25.4  
43 diamonds\_imp\$z\_imp <- diamonds\$z/25.4  
44 # displaying the first 6 rows  
45 head(diamonds\_imp)  
46-

clarity	depth	table	price	x	y	z	x_imp	y_imp	z_imp
S12	61.5	55	326	3.95	3.98	2.43	0.1555118	0.1566929	0.09566929
S11	59.8	61	326	3.89	3.84	2.31	0.1531496	0.1511811	0.09094488
VSI	56.9	65	327	4.05	4.07	2.31	0.1594488	0.1602362	0.09094488
VS2	62.4	58	334	4.20	4.23	2.63	0.1653543	0.1665354	0.10354331
S12	63.3	58	335	4.34	4.35	2.75	0.1708661	0.1712598	0.10826772
VVS2	62.8	57	336	3.94	3.96	2.48	0.1551181	0.1559055	0.09763780

6 rows | 4-13 of 13 columns

47-  
48- # e.  
49-  
50-  
51- over\_under <- c()  
52- for(i in 1:nrow(diamonds\_imp))  
53- { d\_delete <- diamonds\_imp[-i,] # data without the ith row so that we can take the median prices of other diamonds with the same colour,  
54- excluding the price of the ith diamond  
55- over\_under[i] <- diamonds\_imp\$price[i] - median(d\_delete[d\_delete\$color==diamonds\_imp\$color[i],]\$price)}  
56-  
57-  
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Console

RStudio

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Project: (None)

Untitled1\* x Untitled2\* x

47-  
48- # e.  
49-  
50-  
51- over\_under <- c()  
52- for(i in 1:nrow(diamonds\_imp))  
53- { d\_delete <- diamonds\_imp[-i,] # data without the ith row so that we can take the median prices of other diamonds with the same colour,  
54- excluding the price of the ith diamond  
55- over\_under[i] <- diamonds\_imp\$price[i] - median(d\_delete[d\_delete\$color==diamonds\_imp\$color[i],]\$price)}  
56-  
57-  
58-

carat	cut	color	clarity	depth	table	price	x	y	z
0.23	Ideal	E	S12	61.5	55	326	3.95	3.98	2.43
0.21	Premium	E	S11	59.8	61	326	3.89	3.84	2.31
0.23	Good	E	VSI	56.9	65	327	4.05	4.07	2.31
0.29	Premium	I	VS2	62.4	58	334	4.20	4.23	2.63
0.31	Good	J	S12	63.3	58	335	4.34	4.35	2.75
0.24	Very Good	J	VVS2	62.8	57	336	3.94	3.96	2.48

6 rows | 1-10 of 14 columns

59-  
60- # f.  
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Console

RStudio

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Project: (None)

Untitled1\* x Untitled2\* x



```

47 # e.
48
49
50 ## [r]
51 over_under <- c()
52 for(i in 1:nrow(diamonds_imp))
53 { d_delete <- diamonds_imp[-i,] # data without the ith row so that we can take the median prices of other diamonds with the same colour,
  excluding the price of the ith diamond
54 over_under[i] <- diamonds_imp$price[i] - median(d_delete[d_delete$color==diamonds_imp$color[i],]$price)
55 diamonds_imp$over_under <- over_under
56 # displaying the first few rows of diamonds_imp to confirm that this column has been added
57 head(diamonds_imp)
58

```

depth	table	price	x	y	z	x_imp	y_imp	z_imp	over_under
61.5	55	326	3.95	3.98	2.43	0.1555118	0.1566929	0.09566929	-1413
59.8	61	326	3.89	3.84	2.31	0.1531496	0.1511811	0.09094488	-1413
56.9	65	327	4.05	4.07	2.31	0.1594488	0.1602362	0.09094488	-1412
62.4	58	334	4.20	4.23	2.63	0.1653543	0.1665354	0.10354331	-3396
63.3	58	335	4.34	4.35	2.75	0.1708661	0.1712598	0.10826772	-3899
62.8	57	336	3.94	3.96	2.48	0.1551181	0.1559055	0.09763780	-3898

6 rows | 5-14 of 14 columns

```

59
60 # f.
61
62 ## [r]
63 Expensive <- diamonds[diamonds$price>18800,]
64 Expensive
65

```

carat	cut	color	clarity	depth	table	price	x	y	z
2.00	Very Good	H	SI1	62.8	57	18803	7.95	8.00	5.01
2.07	Ideal	G	SI2	62.5	55	18804	8.20	8.13	5.11
1.51	Ideal	G	IF	61.7	55	18806	7.37	7.41	4.56
2.00	Very Good	G	SI1	63.5	56	18818	7.90	7.97	5.04
2.29	Premium	I	VS2	60.8	60	18823	8.50	8.47	5.16

5 rows

```

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```

6 rows | 5-14 of 14 columns

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