QUESTION 1

a. Mode: list
   Class: tbl_df tbl data.frame

b. 53940 rows, 10 columns

c. 64.5

d.

```
# A tibble: 6 x 13
  carat cut       color clarity depth table price     x     y     z x_imp y_imp  z_imp
  <dbl> <ord>     <ord> <ord>   <dbl> <dbl> <int> <dbl> <dbl> <dbl> <dbl> <dbl>  <dbl>
1  0.23 Ideal     E     SI2      61.5    55   326  3.95  3.98  2.43 0.156 0.157 0.0957
2  0.21 Premium   E     SI1      59.8    61   326  3.89  3.84  2.31 0.153 0.151 0.0909
3  0.23 Good      E     VS1      56.9    65   327  4.05  4.07  2.31 0.159 0.160 0.0909
4  0.29 Premium   I     VS2      62.4    58   334  4.2   4.23  2.63 0.165 0.167 0.104
5  0.31 Good      J     SI2      63.3    58   335  4.34  4.35  2.75 0.171 0.171 0.108
6  0.24 Very Good J     VVS2     62.8    57   336  3.94  3.96  2.48 0.155 0.156 0.0976
```

e. INCLUDED IN THE PHOTOS AT THE END OF THE PDF

f.

```
# A tibble: 5 x 10
  carat cut       color clarity depth table price     x     y     z
  <dbl> <ord>     <ord> <ord>   <dbl> <dbl> <int> <dbl> <dbl> <dbl>
1  2    Very Good H     SI1      62.8    57 18803  7.95  8     5.01
2  2.07 Ideal     G     SI2      62.5    55 18804  8.2   8.13  5.11
3  1.51 Ideal     G     IF       61.7    55 18806  7.37  7.41  4.56
4  2    Very Good G     SI1      63.5    56 18818  7.9   7.97  5.04
5  2.29 Premium   I     VS2      60.8    60 18823  8.5   8.47  5.16
```

```
library(tidyverse)
data(diamonds)

mode(diamonds)
class(diamonds)

nrow(diamonds)
ncol(diamonds)

diamonds[12345,]$depth

diamonds_imp <- diamonds
diamonds_imp$x_imp <- diamonds$x/25.4
diamonds_imp$y_imp <- diamonds$y/25.4
diamonds_imp$z_imp <- diamonds$z/25.4
head(diamonds_imp)

over_under <- c()
for(i in 1:nrow(diamonds_imp))
{ d_delete <- diamonds_imp[-i,]
over_under[i] <- diamonds_imp$price[i]-median(d_delete[d_delete$color==diamonds_imp$color[i],]$price)}
diamonds_imp$over_under <- over_under

Expensive <- diamonds[diamonds$price>18800,]
Expensive
```

```
> library(tidyverse)
> data(diamonds)
> mode(diamonds)
[1] "list"
> class(diamonds)
[1] "tbl_df"     "tbl"        "data.frame"
> nrow(diamonds)
[1] 53940
> ncol(diamonds)
[1] 10
> diamonds[12345,]$depth
[1] 64.5
> diamonds_imp <- diamonds
> diamonds_imp$x_imp <- diamonds$x/25.4
> diamonds_imp$y_imp <- diamonds$y/25.4
> diamonds_imp$z_imp <- diamonds$z/25.4
> head(diamonds_imp)
# A tibble: 6 x 13
  carat cut       color clarity depth table price     x     y     z x_imp y_imp  z_imp
  <dbl> <ord>     <ord> <ord>   <dbl> <dbl> <int> <dbl> <dbl> <dbl> <dbl> <dbl>  <dbl>
1  0.23 Ideal     E     SI2      61.5    55   326  3.95  3.98  2.43 0.156 0.157 0.0957
2  0.21 Premium   E     SI1      59.8    61   326  3.89  3.84  2.31 0.153 0.151 0.0909
3  0.23 Good      E     VS1      56.9    65   327  4.05  4.07  2.31 0.159 0.160 0.0909
4  0.29 Premium   I     VS2      62.4    58   334  4.2   4.23  2.63 0.165 0.167 0.104
5  0.31 Good      J     SI2      63.3    58   335  4.34  4.35  2.75 0.171 0.171 0.108
6  0.24 Very Good J     VVS2     62.8    57   336  3.94  3.96  2.48 0.155 0.156 0.0976
> over_under <- c()
> for(i in 1:nrow(diamonds_imp))
+ { d_delete <- diamonds_imp[-i,]
+ over_under[i] <- diamonds_imp$price[i]-median(d_delete[d_delete$color==diamonds_imp$color[i],]$price)}
> diamonds_imp$over_under <- over_under
> Expensive <- diamonds[diamonds$price>18800,]
> Expensive
# A tibble: 5 x 10
  carat cut       color clarity depth table price     x     y     z
  <dbl> <ord>     <ord> <ord>   <dbl> <dbl> <int> <dbl> <dbl> <dbl>
1  2    Very Good H     SI1      62.8    57 18803  7.95  8     5.01
2  2.07 Ideal     G     SI2      62.5    55 18804  8.2   8.13  5.11
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```