

Internal Assessment 1
ECON0791 (Backlog)
Department of Economics
Presidency University, Kolkata
Full Marks: 15
27/12/2022

Answer all of the following questions using R. [2+2+2+2]

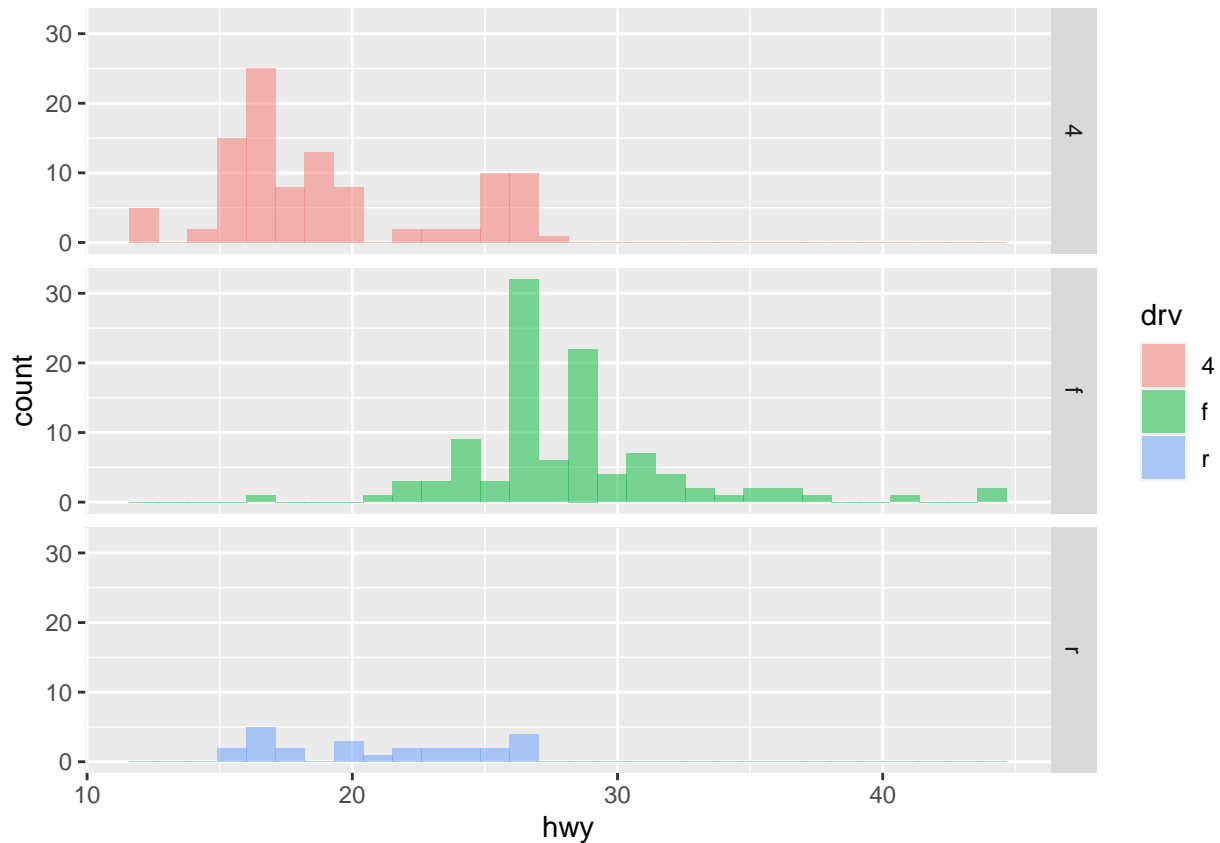
1. Which species have blue eyes in the `starwars` dataset in the `dplyr` package?
2. Tidy and replicate the `construction` dataset in the `tidyr` package as given below.

```
## # A tibble: 108 x 6
##   Year Month   Region Completed_Units_Region Size Completed_Un~1
##   <dbl> <chr>   <chr>          <dbl> <chr>          <dbl>
## 1 2018 January Northeast      114 1 unit      859
## 2 2018 January Northeast      114 2 to 4 units    NA
## 3 2018 January Northeast      114 5 units or more 348
## 4 2018 January Midwest       169 1 unit      859
## 5 2018 January Midwest       169 2 to 4 units    NA
## 6 2018 January Midwest       169 5 units or more 348
## 7 2018 January South        596 1 unit      859
## 8 2018 January South        596 2 to 4 units    NA
## 9 2018 January South        596 5 units or more 348
## 10 2018 January West         339 1 unit      859
## # ... with 98 more rows, and abbreviated variable name 1: Completed_Units_Size
```

3. Run the following codes and explain why the value of `address1` is shown as NA while the `class(address1)` is numeric?

```
x1 <- "Presidency"
x2 <- "University"
x3 <- "Kolkata"
address <- c(x1, x2, x3)
address1 <- as.numeric(address)
address1
class(address1)
```

4. Using the `mpg` dataset in the `ggplot2` package, replicate the following plot.



Answer all of the following questions using Excel. [2+1+2+2]

5. Using the data `GDP.xlsx`, for any two countries plot separate line charts for the components of GDP (Household Consumption Expenditure, Government final consumption expenditure, Net exports and Gross Capital formation).
6. Which specie has the longest and the widest petal in the `iris.xlsx` data?
7. How many years of data are available for each country in the `GDP.xlsx` dataset? How many countries do not have data for all the years?
8. Suppose that the firm's production function is $Q = F(K, L) = 50K^{0.5}L^{0.5}$. Suppose, too, that the price of labour $w=5$ and the price of capital $r=20$. What is the cost minimising input bundle if the firm wants to produce 1,000 units per year?