Sok-1005 assignment 2

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```
rm(list=ls())
library(ggplot2)
```

```
Warning: package 'ggplot2' was built under R version 4.2.2
```

```
library(tidyverse)
```

```
Warning: package 'tidyverse' was built under R version 4.2.2
```

```
Warning: package 'tidyr' was built under R version 4.2.2
```

```
Warning: package 'readr' was built under R version 4.2.2
```

```
Warning: package 'purrr' was built under R version 4.2.2
```

```
Warning: package 'dplyr' was built under R version 4.2.2
```

```
Warning: package 'stringr' was built under R version 4.2.2
```

```
Warning: package 'forcats' was built under R version 4.2.2
```

```
Warning: package 'lubridate' was built under R version 4.2.2
```

```
-- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
v dplyr     1.1.0     v readr     2.1.4
v forcats   1.0.0     v stringr   1.5.0
v lubridate 1.9.2     v tibble    3.1.8
v purrr     1.0.1     v tidyr     1.3.0
-- Conflicts ------------------------------------------ tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to becom
```

```
library(rvest)
```

```
Warning: package 'rvest' was built under R version 4.2.2
```

```
Attaching package: 'rvest'

The following object is masked from 'package:readr':

    guess_encoding
```

```
library(janitor)
```

```
Attaching package: 'janitor'

The following objects are masked from 'package:stats':

    chisq.test, fisher.test
```

```
library(lubridate)
library(dplyr)
library(janitor)
library(quantmod)
```

```
Warning: package 'quantmod' was built under R version 4.2.2

Loading required package: xts
```

```
Warning: package 'xts' was built under R version 4.2.2

Loading required package: zoo

Warning: package 'zoo' was built under R version 4.2.2


Attaching package: 'zoo'

The following objects are masked from 'package:base':

    as.Date, as.Date.numeric


###################################### WARNING ######################################
# We noticed you have dplyr installed. The dplyr lag() function breaks how    #
# base R's lag() function is supposed to work, which breaks lag(my_xts).      #
#                                                                             #
# Calls to lag(my_xts) that you enter or source() into this session won't     #
# work correctly.                                                             #
#                                                                             #
# All package code is unaffected because it is protected by the R namespace   #
# mechanism.                                                                  #
#                                                                             #
# Set `options(xts.warn_dplyr_breaks_lag = FALSE)` to suppress this warning.  #
#                                                                             #
# You can use stats::lag() to make sure you're not using dplyr::lag(), or you #
# can add conflictRules('dplyr', exclude = 'lag') to your .Rprofile to stop   #
# dplyr from breaking base R's lag() function.                                #
###################################### WARNING ######################################

Attaching package: 'xts'

The following objects are masked from 'package:dplyr':

    first, last

Loading required package: TTR

Warning: package 'TTR' was built under R version 4.2.2
```

```
Registered S3 method overwritten by 'quantmod':
  method            from
  as.zoo.data.frame zoo
```

```
library(naniar)
```

```
Warning: package 'naniar' was built under R version 4.2.2
```

```
url  <- "https://www.motor.no/aktuelt/motors-store-vintertest-av-rekkevidde-pa-elbiler/217
rekkeviddetall <- read_html(url)
rekkeviddetall <- url %>%
  read_html() %>%
  html_element("table") %>%
  html_table() %>%
  row_to_names(row_number = 1)

rekkeviddetall <- rekkeviddetall %>%
  separate(`WLTP-tall`, into=c("wltp_km", "wltp_kwh"), sep="/") %>%
  separate(wltp_km, into="wltp_km", sep=" ") %>%
  separate("STOPP", into=c("stopp_km"), sep=" ")
```

```
Warning: Expected 1 pieces. Additional pieces discarded in 33 rows [1, 2, 3, 4, 5, 6, 7,
8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, ...].
```

```
Warning: Expected 1 pieces. Additional pieces discarded in 31 rows [1, 2, 3, 4, 5, 6, 7,
8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, ...].
```

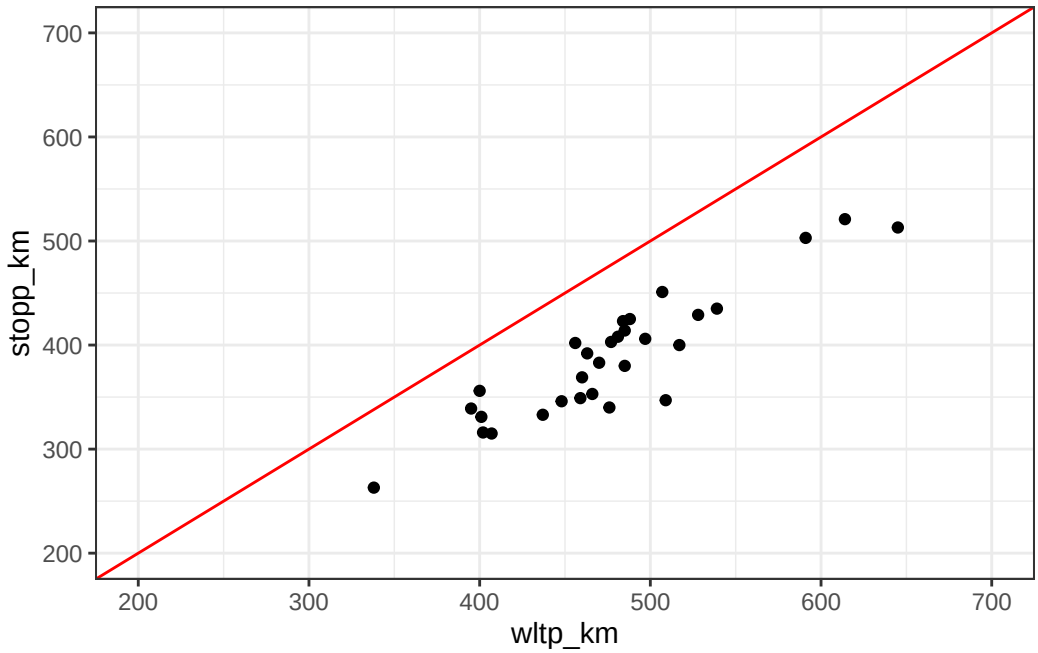
```
rekkeviddetall <-rekkeviddetall[c(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 1

rekkeviddetall <- rekkeviddetall %>%
mutate_at(c('wltp_km', 'stopp_km'), as.numeric)



  #pivot_wider(names_from = Modell (), values_from = value)
```

```r
rekkeviddetall %>%
  ggplot(aes(x=`wltp_km`, y=stopp_km))+
  geom_point()+
  geom_abline(slope=1, color="red")+
  scale_x_continuous(limits = c(200, 700))+
  scale_y_continuous(limits = c(200, 700))+
  theme_bw()
```




```r
lm(stopp_km ~ wltp_km, data = rekkeviddetall)
```

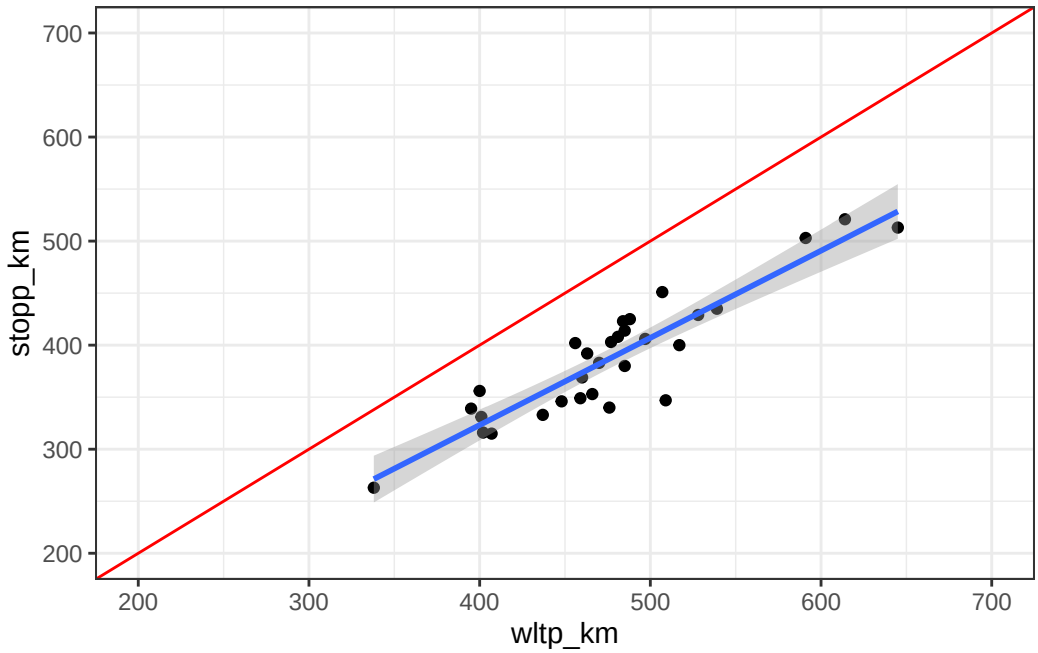
```
Call:
lm(formula = stopp_km ~ wltp_km, data = rekkeviddetall)

Coefficients:
(Intercept)      wltp_km
   -11.9000       0.8378
```

```r
rekkeviddetall %>%
  ggplot(aes(x=`wltp_km`, y=stopp_km))+
```

```
    geom_point()+
    geom_abline(slope=1, color="red")+
    geom_smooth(method = lm) +
    scale_x_continuous(limits = c(200, 700))+
    scale_y_continuous(limits = c(200, 700))+
    theme_bw()
```

```
`geom_smooth()` using formula = 'y ~ x'
```



we are shown a few numbers, 0.8378 is how much km increases in each instance, when the expected number in normal circumstances would be a increase of 1. -11.9000 tells us when the two lines will intercept. The difference between the red line and he blue line represents what we expect the performance to be and what we experience in the cold arctic climate.