Oblig1c.Rmd

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R Markdown

Eg har gjort R basic.

Including Plots

#You can also embed plots, for example:

#{r pressure, echo=FALSE} #plot(pressure) #

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

Oppgave 3: Produser dataene fra oblig 1 i en PDF.

```
data_kvit <- read.csv("rosa_kvit42.csv")
data_groon <- read.csv("rosa_groon42.csv")

head(data_kvit[, c("Lower", "Upper")], 31)
```

```
##    Lower Upper
## 1    3.5  10.0
## 2    3.7  12.5
## 3    3.6  11.5
## 4    3.3  12.0
## 5    3.6  12.5
## 6    3.6  11.0
## 7    3.5  11.2
## 8    3.4  11.3
## 9    3.6  11.7
## 10   3.5  11.6
## 11   3.6  12.7
## 12   3.5  12.5
## 13   3.4  12.2
## 14   3.4  12.0
## 15   3.3  11.9
## 16   3.5  11.6
## 17   3.6  12.5
## 18   3.5  12.0
## 19   3.7  10.8
## 20   3.6  11.5
## 21   3.6  11.7
```

```
## 22   3.5  12.0
## 23   3.6  13.4
## 24   3.6  12.4
## 25   3.6  11.8
## 26   3.4  12.3
## 27   3.5  11.5
## 28   3.6  12.3
## 29   3.6  12.8
```

```r
head(data_groon[, c("Lower", "Upper")], 31)
```

```
##    Lower Upper
## 1    3.7  10.7
## 2    3.5  10.5
## 3    3.6  10.8
## 4    3.5  11.5
## 5    3.5  10.9
## 6    3.5  11.0
## 7    3.5  12.0
## 8    3.7  11.0
## 9    3.6  10.6
## 10   3.7  10.4
## 11   3.4  11.2
## 12   3.5  11.6
## 13   3.6  10.4
## 14   3.7  10.9
## 15   3.8  11.1
## 16   3.7  10.5
## 17   3.8   1.4
## 18   3.6  10.6
## 19   3.6  11.1
## 20   3.5  10.3
## 21   3.5  10.8
## 22   3.6  11.5
## 23   3.7  11.0
## 24   3.6  11.6
## 25   3.5  11.2
## 26   3.6  10.9
## 27   3.6  11.0
## 28   3.5  10.5
## 29   3.5  10.5
```

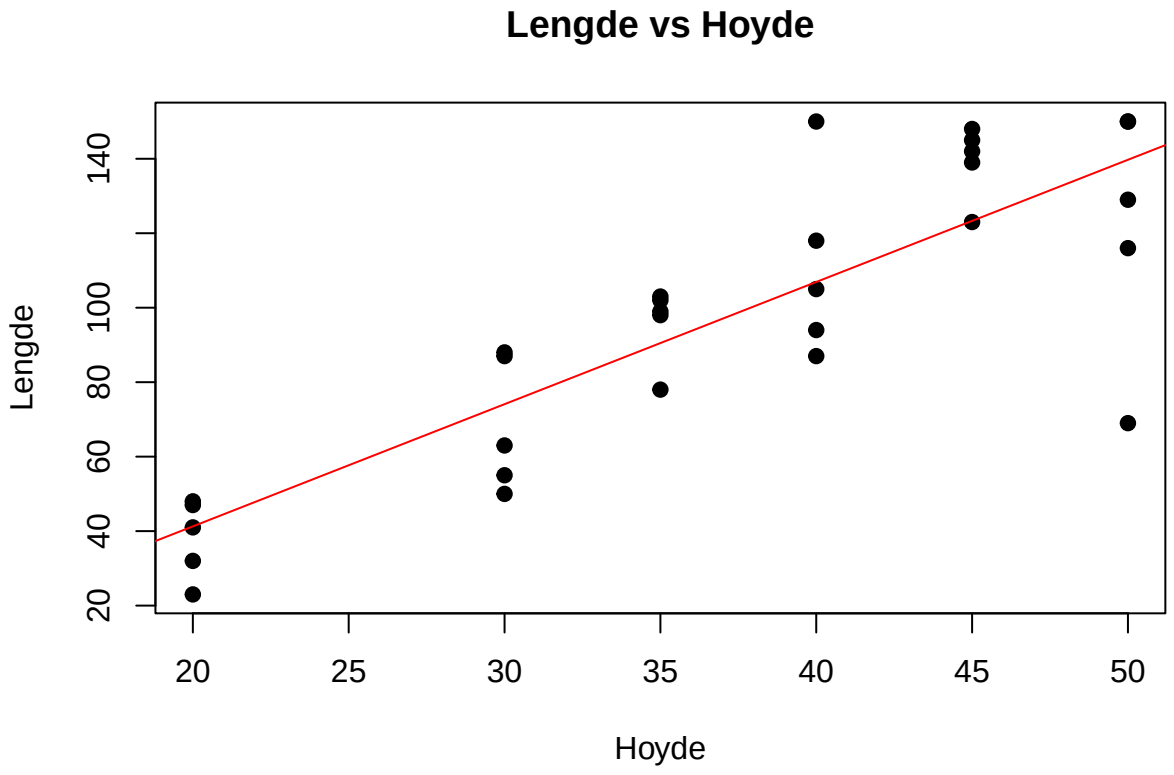
Oppgave 4:

```r
# read.csv funksjon oppgave 1b. Leser Terning_20.csv
data_terning <- read.csv("Terning_20.csv")

# Regresjons linje
regression_model <- lm(Lengde ~ Hoyde, data = data_terning)

summary(regression_model)
```

```
##
```

```
## Call:
## lm(formula = Lengde ~ Hoyde, data = data_terning)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -70.723 -12.145   6.229  12.253  43.094
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  -24.363     14.921  -1.633    0.114
## Hoyde          3.282      0.393   8.351 4.38e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21.22 on 28 degrees of freedom
## Multiple R-squared:  0.7135, Adjusted R-squared:  0.7033
## F-statistic: 69.74 on 1 and 28 DF,  p-value: 4.379e-09
```

```
# Plotter splatterplot og regresjons linje
plot(data_terning$Hoyde, data_terning$Lengde, main = "Lengde vs Hoyde", xlab = "Hoyde", ylab = "Lengde"
abline(regression_model, col = "red")
```




```
head(fuel2001)
```

```
##     Drivers    FuelC Income  Miles      MPC      Pop  Tax
```

```
## AL  3559897  2382507  23471  94440 12737.00  3451586 18.0
## AK   472211   235400  30064  13628  7639.16   457728  8.0
## AZ  3550367  2428430  25578  55245  9411.55  3907526 18.0
## AR  1961883  1358174  22257  98132 11268.40  2072622 21.7
## CA 21623793 14691753  32275 168771  8923.89 25599275 18.0
## CO  3287922  2048664  32949  85854  9722.73  3322455 22.0
```

```
write.csv(fuel2001, "fuel2001.csv")
```

Oppgave 24 kapittel4

```
# A)
# Sekvens for Kron og mynt
sequence <- "MKMKKKMMMKMMKKKKKMKKMMMMKKKMMMMKKKKMMMKKKKMMMKMKKK"

# Lengden på sekvensen, som tilsvarer antall kast
n <- nchar(sequence)

# Beregn sannsynligheten
P <- (1/2)^n

# Skriv ut resultatet
print(P)
```

```
## [1] 8.881784e-16
```

```
# B)
# Beregn sannsynligheten for den spesifikke sekvensen
P2 <- (1/2)^n

# Skriv ut resultatet
print(P2)
```

```
## [1] 8.881784e-16
```

```
# C)
# Definer antall kast og antall "K"
K <- 27

# Beregner antall kombinasjoner
combinations <- choose(n, K)

# Skriver ut resultatet
print(combinations)
```

```
## [1] 1.080433e+14
```

```
# D)
total = 2^n
print(total)
```

```
## [1] 1.1259e+15
```

```r
# E)
# Definer antall kast (n), antall "K" (k), og suksesssannsynlighet for hvert kast (p)
K <- 27
p <- 1/2

# Beregn binomialkoeffisienten
binom_coeff <- choose(n, K)

# Beregn sannsynligheten for nøyaktig k "K" på n kast
P <- binom_coeff * (p^K) * ((1-p)^(n-K))

# Skriv ut resultatet
print(P)
```

```
## [1] 0.09596169
```