# Oblig 1b: Terningdropp Analysis

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## 1 Introduction

Briefly describe the objective of the assignment and the methods used.

## 2 Data Collection

### 2.1 CSV Data

```
# Reading CSV data in R
df <- read.csv("./terningDroppXY.csv")
```

## 3 Linear Regression Analysis

### 3.1 First 5 Measurements

```
lm_first5 <- lm(Lengde ~ Dropp, data=df[1:5, ])
```

**Calculated Regression Line:** Include your manual calculation or calculator output here.

### 3.2 Entire Dataset

```
lm_full <- lm(Lengde ~ Dropp, data=df)
```

# 4 Data Visualization

## 4.1 Scatter Plot of Data Points

scatterplot.png

*Scatter plot of the Dropp vs Lengde data.*

## 4.2   Regression Line Plot

regression_plot.png

*Scatter plot with regression line.*

# 5   Residual Analysis

## 5.1   Sum of Squared Residuals

### 5.1.1   First 5 Measurements

ssr_first5 <- sum(residuals(lm_first5)^2)

**SSR for First 5 Measurements:**

$$SSR = <calculated\_value>$$

### 5.1.2   Entire Dataset

ssr_full <- sum(residuals(lm_full)^2)

**SSR for Entire Dataset:**

$$SSR = < calculated\_value >$$

## 5.2  Standard Error

### 5.2.1  First 5 Measurements

se_first5 <- sqrt(ssr_first5 / lm_first5$df.residual)

**Standard Error for First 5 Measurements:**

$$SE = < calculated\_value >$$

### 5.2.2  Entire Dataset

se_full <- sqrt(ssr_full / lm_full$df.residual)

**Standard Error for Entire Dataset:**

$$SE = < calculated\_value >$$

# 6  Conclusion

Summarize your findings and observations from the assignment.