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# Topic Outline

3c1. Prologue

**Terminology**

**Types of Data Analysis**

# Terminology

## experiment

a test where we attempt to determine a cause-effect relationship

## variables

independent  
dependent

the parameters that can change we control them (the “causes”)  
we measure them (the “effects”)

## result

the value of a dependent variable after an experiment (the effect)

## expected value

what we would predict to measure as a result

## confidence

how much the result might vary from experiment to experiment

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# Types of Data Analysis

## Numerical

Determine the expected value of an experiment based on past history.

## Error

Determine the confidence we have in obtaining the expected value based on past history and measuring method.

## Graphical

Quantify the dependence a result appears to have on an independent variable.

## Statistical

Determine the extent to which results of different experiments are significantly different from each other given the expected value and confidence for the experiments.