2 General Kinds of Data (but 3 families)

Discrete Data (a.k.a. - Attributes Data) (Count Data)

– **(#1) Number of Items in a Category (&Count-Based Proportions)**
(Where can count both the number of occurrences and non-occurrences)

Type-I Attributes Data (Binomial Distribution)

  – Heads / Tails (i.e., counting # of Heads and # of Tails)
  – Yes / No (Order Form Filled Out Accurately or Not)
  – Pass / Fail; Good / Bad (Accurate Billing/Overcharged)

– **(#2) Counts of Discrete Event Occurrences**
(Where can not count the number of non-occurrences)

Type-II Discrete Data (Poisson Distribution)

  → # of Scratches on a Car Hood
  → # of Employee Accidents per Month
  → # of Insulation Breaks in a Spool of Wire

Just ask yourself, "Am I counting things, here"? If yes, you have attributes data.

Continuous Data (a.k.a. - Variables Data) (Measured Data)

  > Decimal subdivisions are meaningful
  → Ex: Time to answer the telephone

Different Types Of Data Require Different Analysis Tools

3 Families of Data:

Manufacturing Process: Making Sheets of Glass

		Sample#1	Sample#2	Sample#3	Sample#4	

DISCRETE DATA — "Am I Counting Things?" (Attributes Data)

P-Chart or NP-Chart
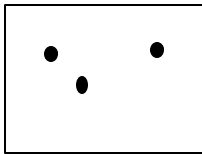
Any Bubbles? (accept / reject the entire item)

Reject | Reject | Accept | Reject

U-Chart or C-Chart

Number of Bubbles?
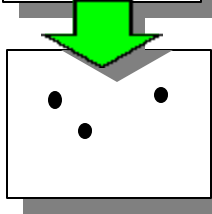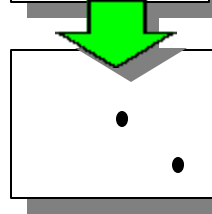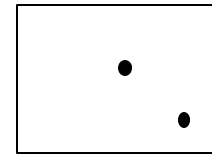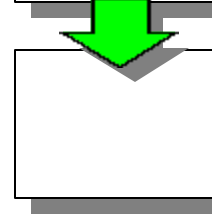
3 Bubbles | 2 Bubbles | 0 Bubbles | 4 Bubbles
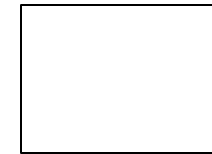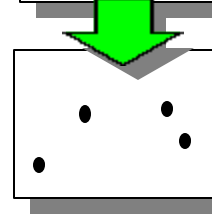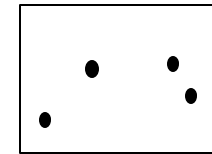
Binomial Distribution

Poisson Distribution

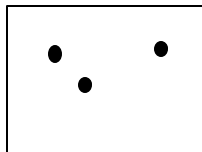**CONTINUOUS DATA** (Variables Data) (Measurement Data)

X-Bar & R-Chart
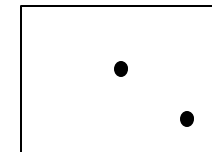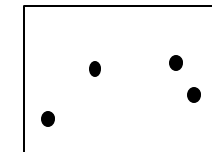
Bubble Diameter

OR

I & MR-Chart

Glass Weight

Y1 = 12.2
Y2 = 11.1
Y3 = 13.3

Y1 = 12.2
Y2 = 12.2

Y1 = 12.2
Y2 = 11.1
Y3 = 13.3
Y4 = 13.3

Normal Distribution or Other