

INTRODUCTION

- In [statistics](#), a **frequency distribution** is a table that displays the frequency of various outcomes in a [sample](#). Each entry in the table contains the [frequency](#) or count of the occurrences of values within a particular group or interval, and in this way, the table summarizes the [distribution](#) of values in the sample.
- A **frequency distribution** shows us a summarized grouping of data divided into mutually exclusive classes and the number of occurrences in a class. It is a way of showing unorganized data.

e.g. to show results of an election, income of people for a certain region, sales of a product within a certain period, student loan amounts of graduates, etc. Some of the graphs that can be used with frequency distributions are [histograms](#), [line charts](#), [bar charts](#) and [pie charts](#). Frequency distributions are used for both qualitative and quantitative data.

Types of frequency distribution



1. Relative frequency distribution
 2. Cumulative frequency distribution
- Cumulative relative frequency distribution

Class Limits (in miles)	Frequency
1-3	10
4-6	14
7-9	10
10-12	6
13-15	5
16-18	5
Total	50

CUMULATIVE FREQUENCY DISTRIBUTION



Technically, a cumulative frequency distribution is the sum of the class and all classes below it in a frequency distribution. All that means is you're adding up a value and all of the values that came before it.

Selling Price (\$ thousands)	Frequency	Cumulative Frequency	Found by
15 up to 18	8	8	
18 up to 21	23	31	← 8 + 23
21 up to 24	17	48	8 + 23 + 17
24 up to 27	18	66	8 + 23 + 17 + 18
27 up to 30	8	74	⋮
30 up to 33	4	78	
33 up to 36	2	80	
Total	<u>80</u>		

CUMMULATIVE RELATIVE FREQUENCY DISTRIBUTION

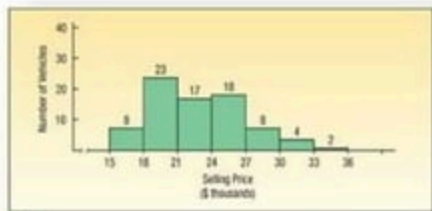


- Cumulative relative frequency is a statistical calculation figured by **adding together** previously **tabulated relative frequencies** that makes a running total along a frequency table.
- The relationship between cumulative frequency and relative cumulative frequency is given by;

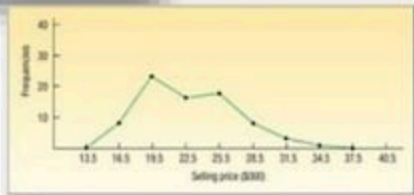
$$\text{Cumulative Relative Frequency} = \frac{\text{Cumulative Frequency}}{\text{Sample Size}}$$

GRAPHIC PRESENTATIONS OF FREQUENCY DISTRIBUTION

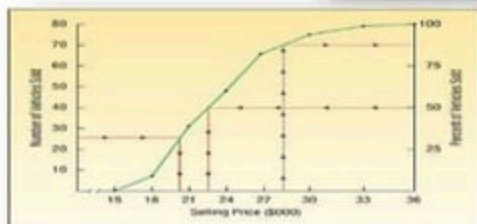
1. Histograms



2. Polygons



3. Cumulative frequency distribution



STEPS TO A PROBLEM



Step 1: Make a table with the category names and counts.

PET TYPE	COUNT
Dog	16
Cat	28
Fish	8
Others	4
Total	56

Step 2: Add a second column called “relative frequency”.

PET TYPE	COUNT	REL FREQ
Dog	16	0.28
Cat	28	0.50
Fish	8	0.14
Others	4	0.07
Total	56	1

To find the **cumulative relative frequency**, follow the steps above to create a relative frequency distribution table. As a final step, add up the relative frequencies in another column.

PET TYPE	COUNT	REL FREQ	CRel FREQ
Dog	16	0.29	0.28
Cat	28	0.50	0.79
Fish	8	0.14	0.93
Others	4	0.07	1
Total	56	1	

ADVANTAGES AND LIMITATIONS OF FREQUENCY DISTRIBUTION



- Condense and summarize large amounts of data in a useful format.
- Describe all variable types.
- Facilitate graphic presentation of data.
- Begin to identify population characteristics.
- Permit cautious comparison of data sets.

- There are a few methods can used in formulating class intervals: “from 5-10” or “Over 55” & “less than 30”.

THANK YOU