

Psy 331

Inferential Statistics

Frequency Distributions and Graphs



What We Will Cover in This Section

- Introduction
- Frequency Distributions
- Graphs



Data For a Group of People

15	13	14	11
14	12	17	15
11	15	14	12
13	10	13	15
12	14	13	14

Table 1. Summary of PDQ test scores. (N=20)

Score	Frequency (f)	Percent	Cum % Percentile
17	1	5.00	100
16	0	0	95
15	4	20.00	95
14	5	25.00	75
13	4	20.00	50
12	3	15.00	30
11	2	10.00	15
10	1	5.00	5

Common Statistics

- Frequency
 - The number of people who got a certain score.
 - Symbolized with f.
- Number
 - The total count of observations in a sample.
 - Symbolized with N.
- Percent
 - $(f/N) \times 100$
- Percentile
 - The percent of people who got a score and lower.
 - Symbolized with P_n .

Table 2. PDQ test score distribution. (N = 50)

Score	Frequency (f)	Cum f	Cum % Percentile
94-96	1	50	100.00
91-93	1	49	98.00
88-90	6	48	96.00
85-87	10	42	84.00
82-84	6	32	64.00
79-81	6	26	52.00
76-78	6	20	40.00
73-75	2	14	28.00
70-72	5	12	24.00
67-69	5	7	14.00
64-66	0	2	4.00
61-63	2	2	4.00

Key Terms for Grouped Distribution

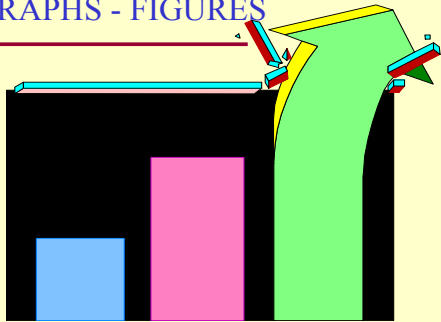
- **Interval**
 - The number of scores within each group.
- **Upper Limit**
 - The highest score in a group.
- **Lower Limit**
 - The lowest score in a group.

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GRAPHS - FIGURES



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Bar Graph

Used for nominal or ordinal data.

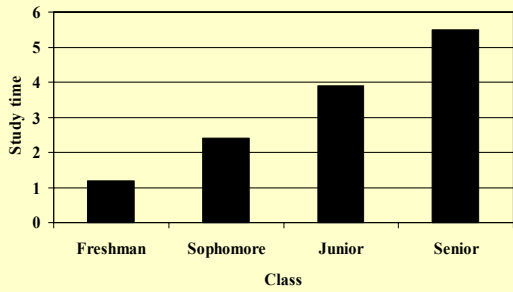
- The bars do **not** touch each other.
- All numbers are represented.
- There is **no grouping** of numbers.

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Figure 1. Average hours spent studying per day.

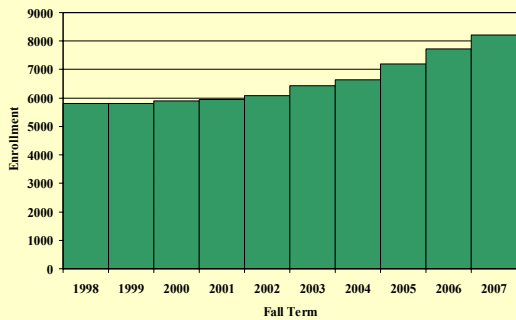


Histogram

Used for interval and ratio data.

- The scores are shown on the x-axis.
- Frequency is shown on the y-axis.
- Same numbering rules as for the grouped frequency distribution.
- The bars touch each other.

Figure 2. University Enrollment - Fall Terms - 1998 to 2007



APA Figure Format

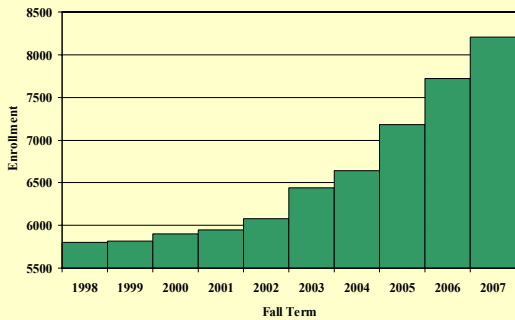
- Title at the top labeled as figure.
- Y-axis always starts at zero.
- 8 x 5 aspect ratio.
- All elements are labeled.

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Figure 2. University Enrollment - Fall Terms - 1998 to 2007

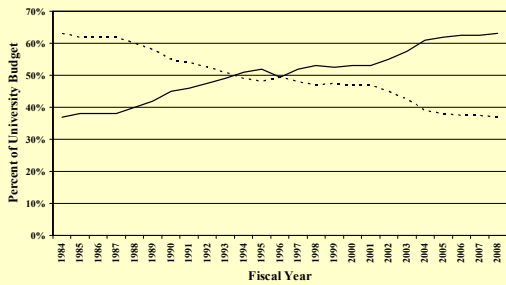


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Figure 3. PASSHE Appropriation vs. Tuition as Proportion of University Budget



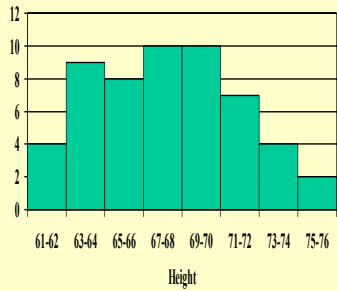
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Figure 1. Class height frequency

Error:
Chart Too Tall



Important Histograms

Normal Distribution

Leptokurtic

