

Summarizing and Graphing Data

Math 122



Things To Look For in Data

- Shape of data
- Center
- Variation

Drawing a Frequency Table

How many hours did
you study between
Friday afternoon and
Monday morning?

Frequency

Hours

1 - 2. *

3 - 4. *

5 - 6. *

7 - 8. *

9 - 10. *

T

- | | |
|----------------------------|--|
| 4, ①, 3, 4, 4, 3.5, ①, 4.5 | |
| 5, ①, 4, 3, 4, ②, 3.14, 4 | |
| 4, 4, 3, ②, ①, 5, ②, 10 | |
| 3, 4, 4, 5, ①, 3, ①, 7 | |

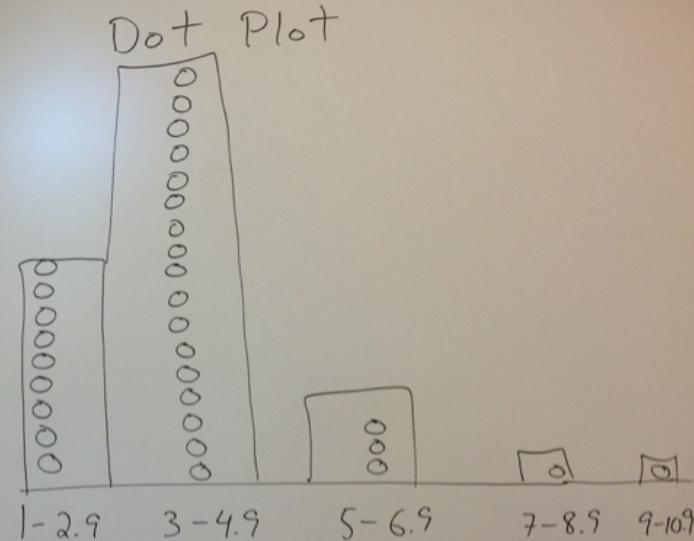
Drawing a Frequency Table

Frequency Table

Hours	Frequency
1 - 2.9	9
3 - 4.9	17
5 - 6.9	3
7 - 8.9	1
9 - 10.9	1

Total: 31

Dot Plot



Cumulative Frequency Table

Cumulative Frequency Table

Hours	Cumulative Frequency
1-2.9	9
1-4.9	26
1-6.9	29
1-8.9	30
1-10.9	31

Relative Frequency Table

Relative Frequency Table

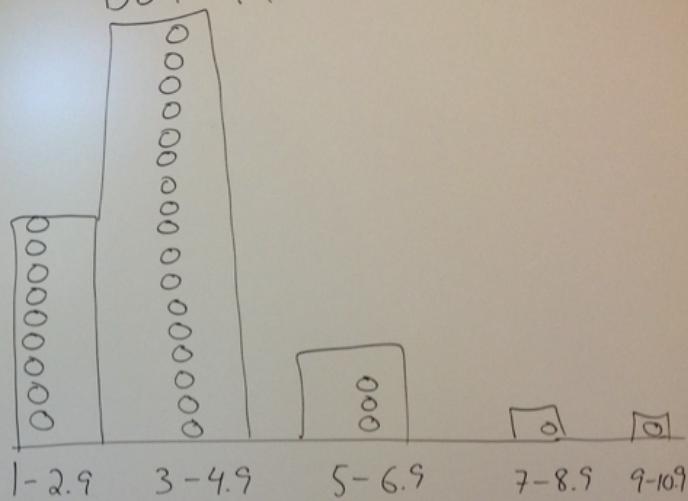
Hours	Relative Frequency
1-2.9	29%
3-4.9	55%
5-6.9	10%
7-8.9	3%
9-10.9	3%
-8.9	
9-10.9	

Frequency Table

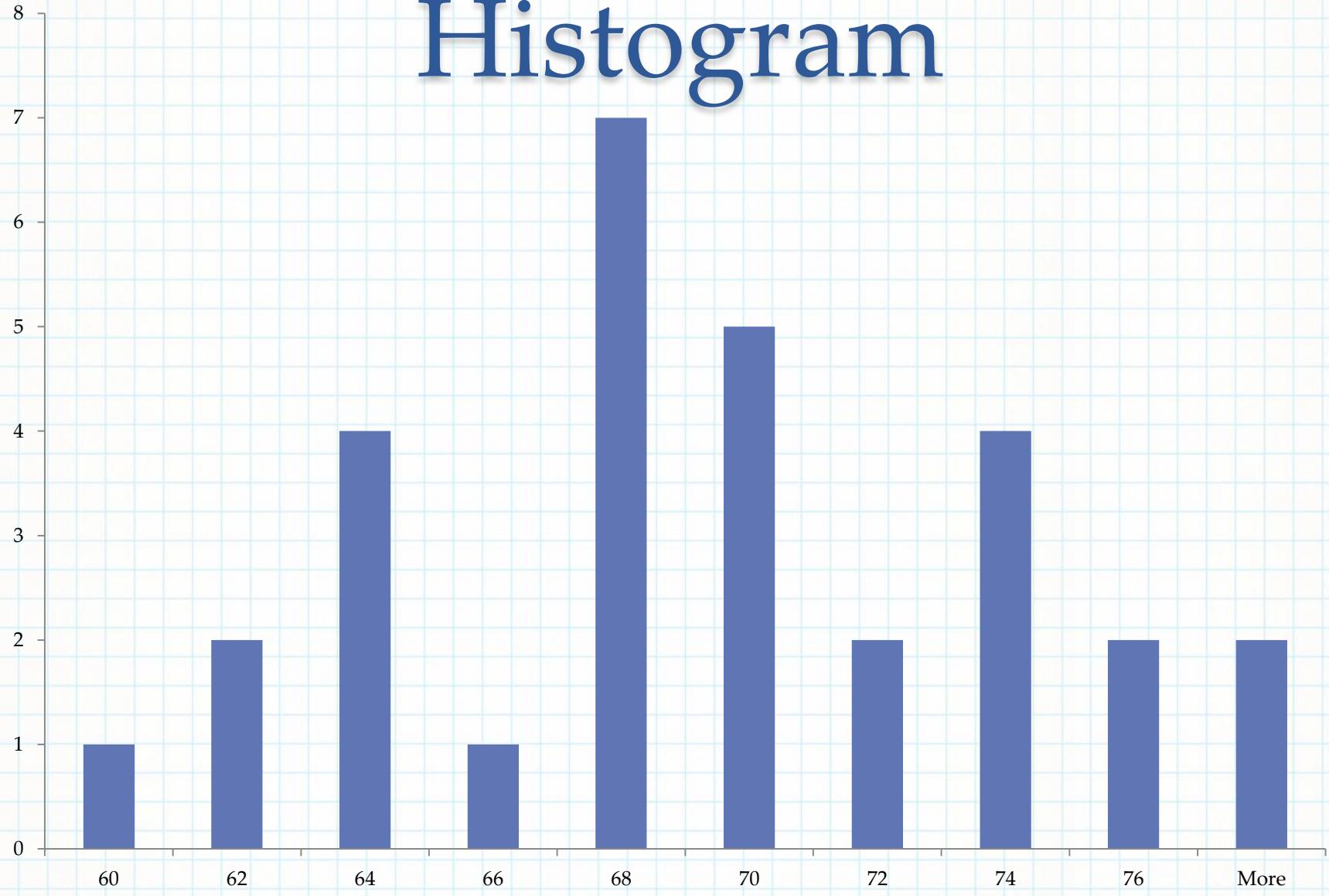
Hours	Frequency
1 - 2.9	9
3 - 4.9	17
5 - 6.9	3
7 - 8.9	1
9 - 10.9	1

Total: 31

Dot Plot



Histogram



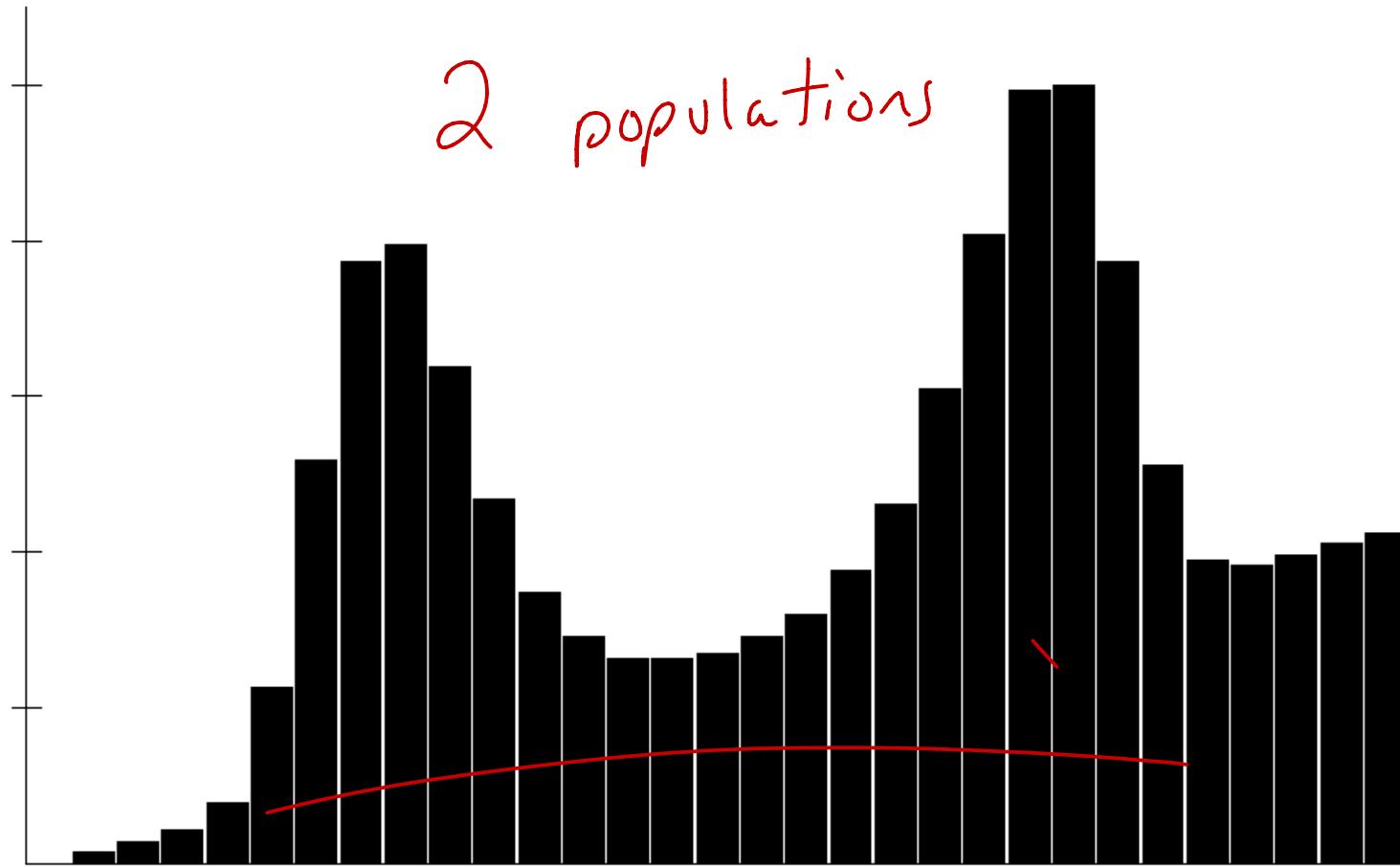
Calculator

	TI	Online Calculator
Enter Data	STAT, EDIT	List
Summary Statistics	STAT, CALC 1-Var Stats	Stat sumstat(list)
Histogram	2 nd STAT PLOT Select plot,list	Stat hbar(list,width) <i>Stat Plot</i> <i>bar char</i>

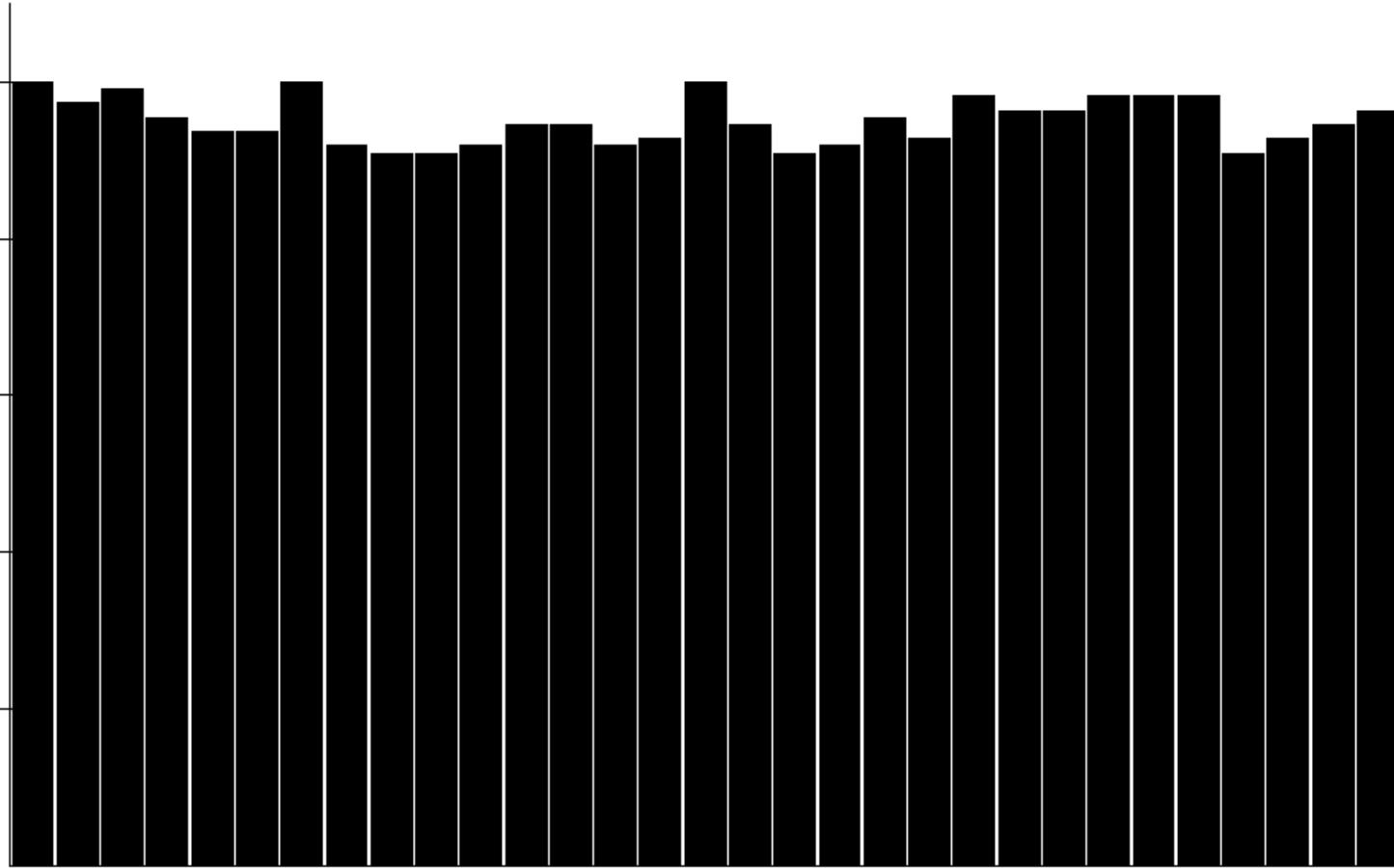
Things to Look For In Histograms



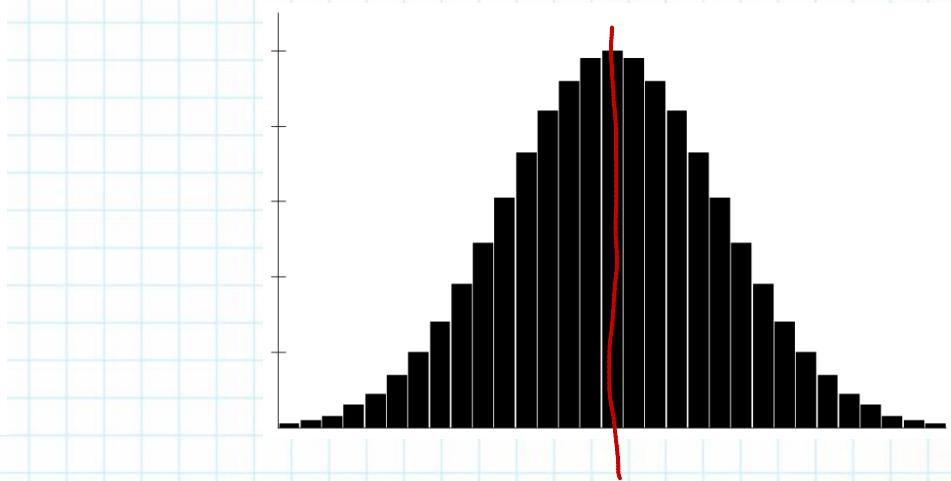
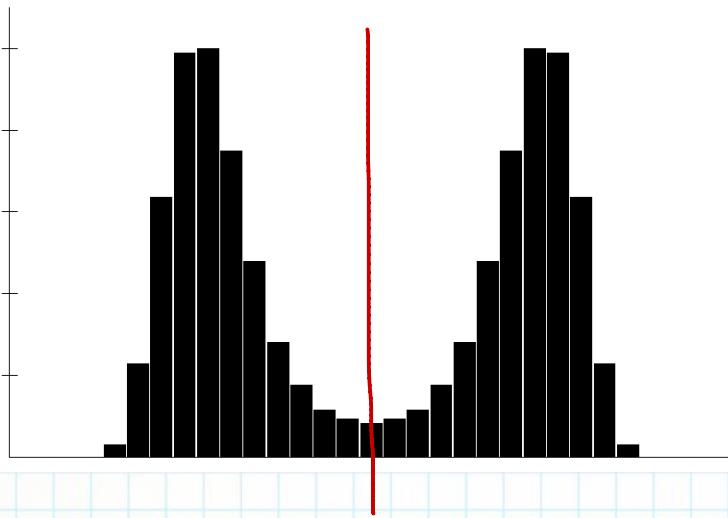
Multiple Peaks



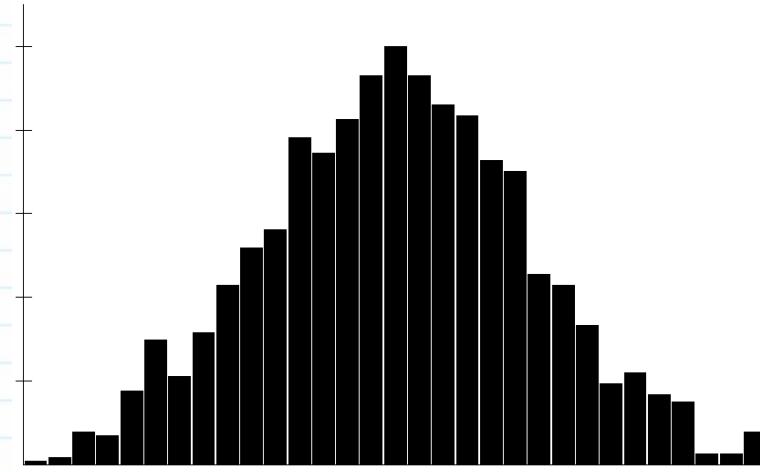
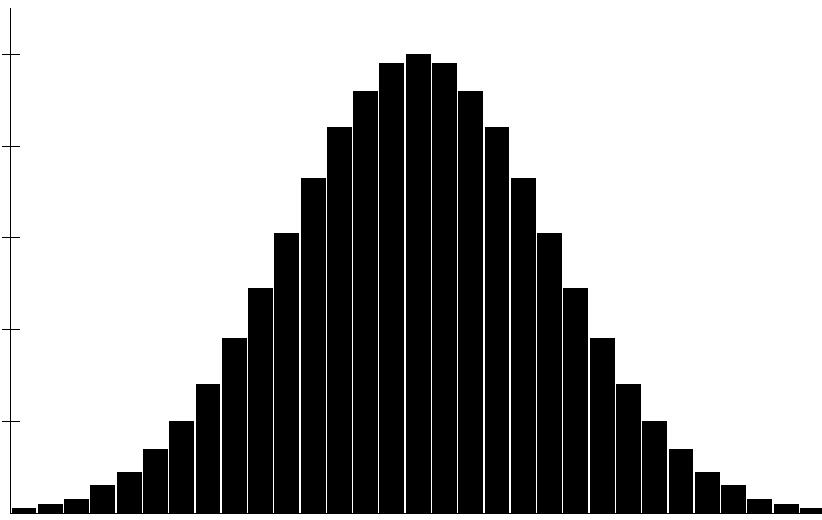
Approximately Uniform



Symmetry

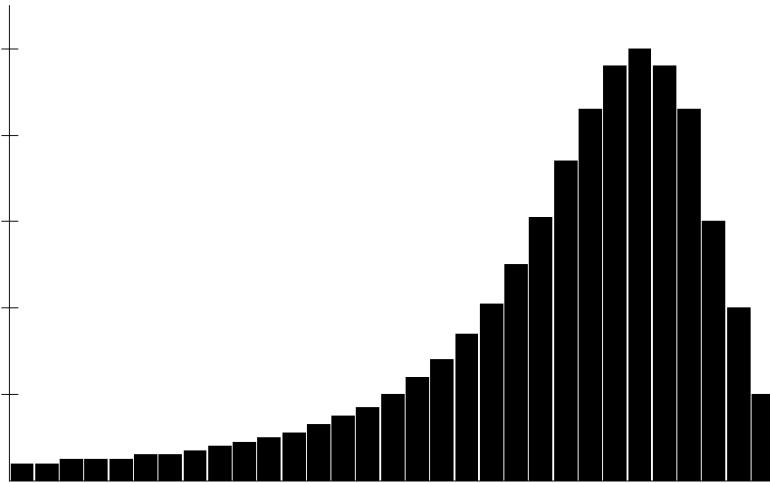


Bell Shaped -- Normal

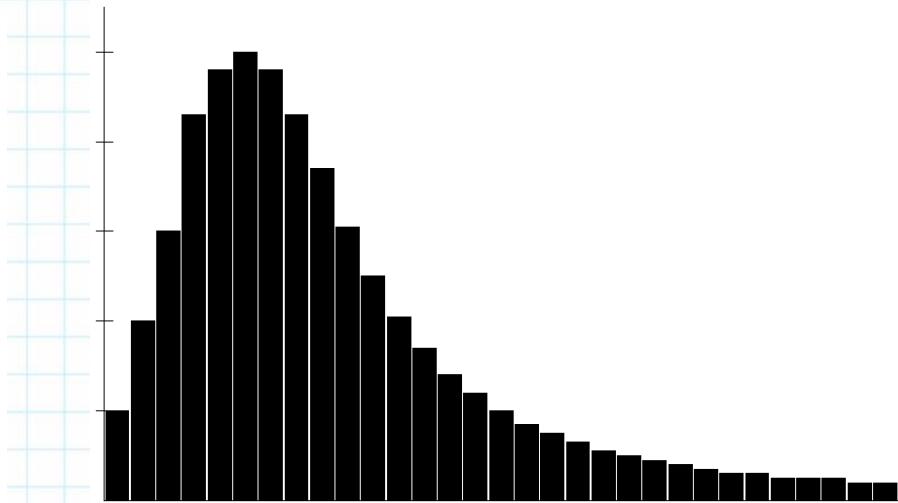


Skewness

Skew Left



Skew Right



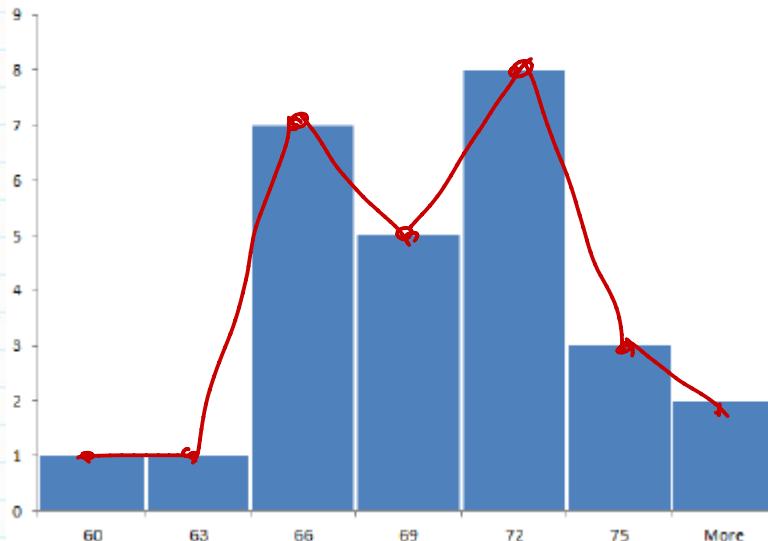
Other Statistical Graphs



Frequency Polygon

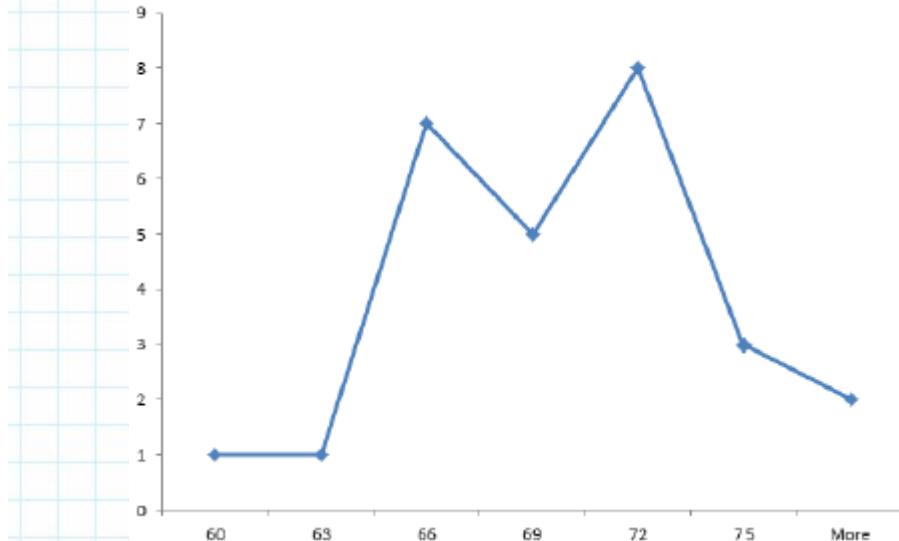
Histogram

Heights of 27 College Students

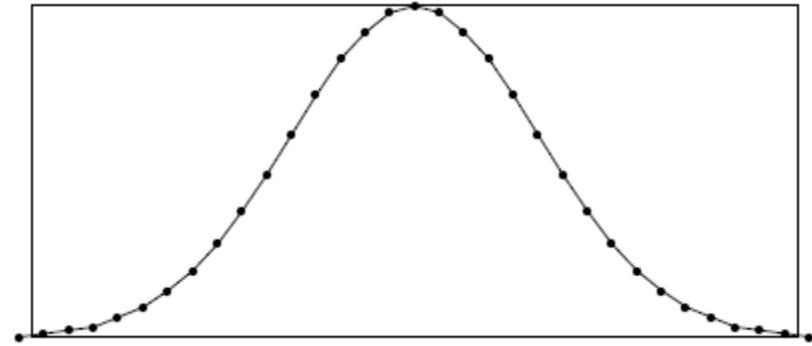
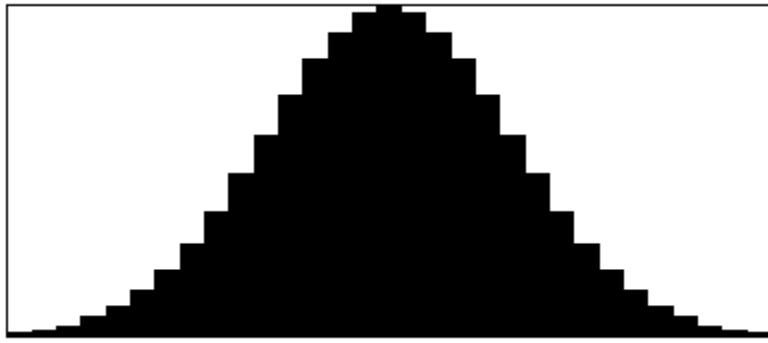


Polygon

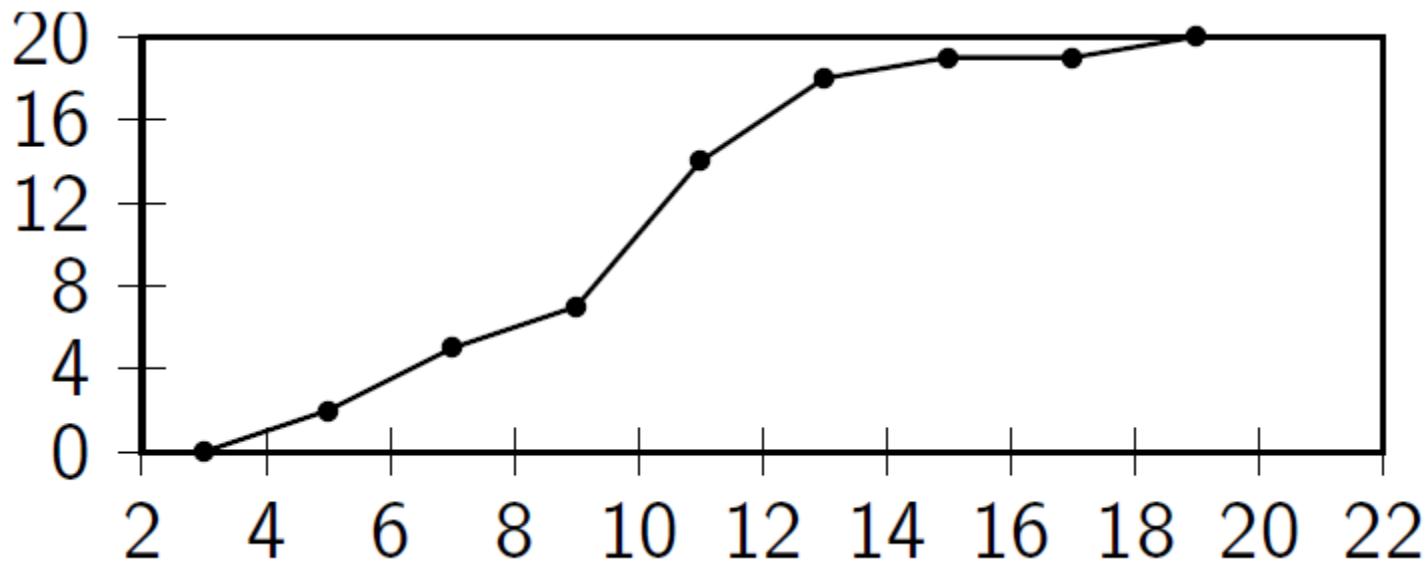
Heights of 27 College Students



Frequency Polygon



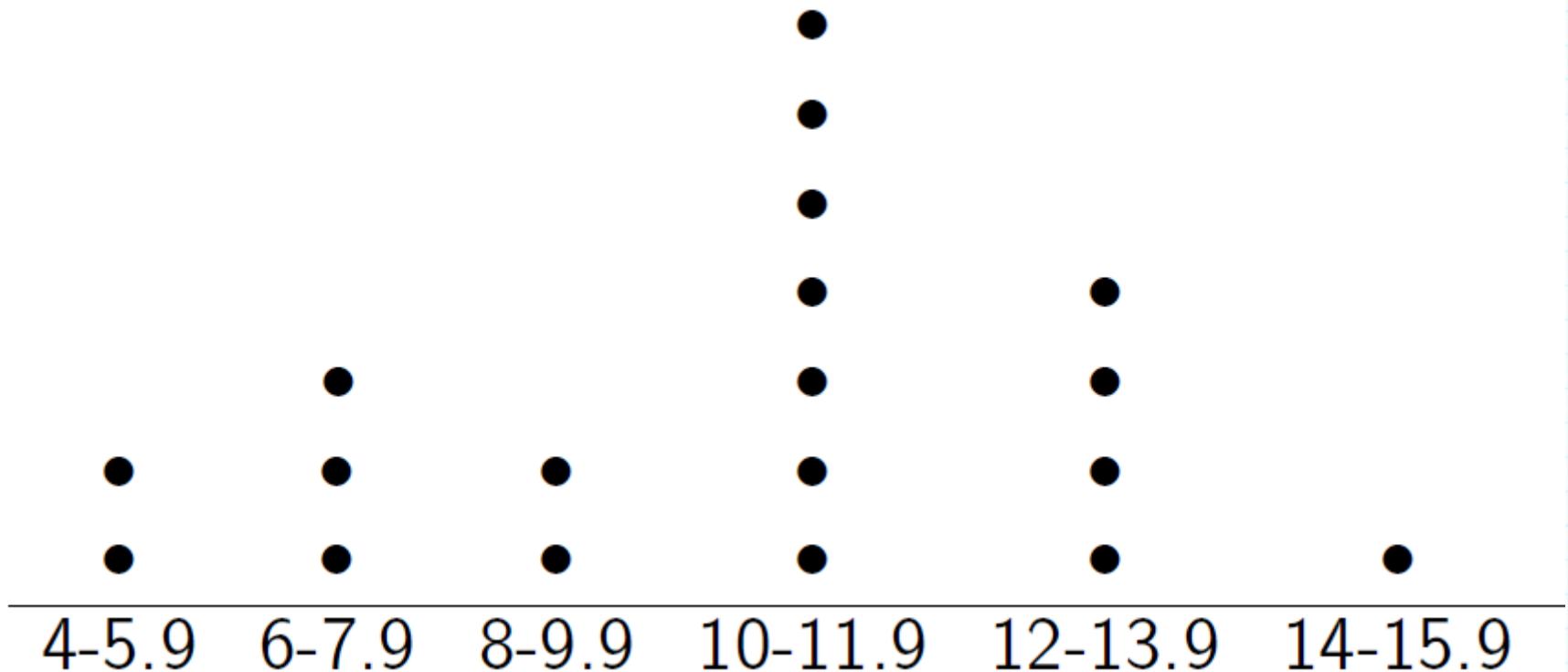
Ogive



#s must increase

Frequency Polygon of a Cumulative Frequency Table

Dot Plot

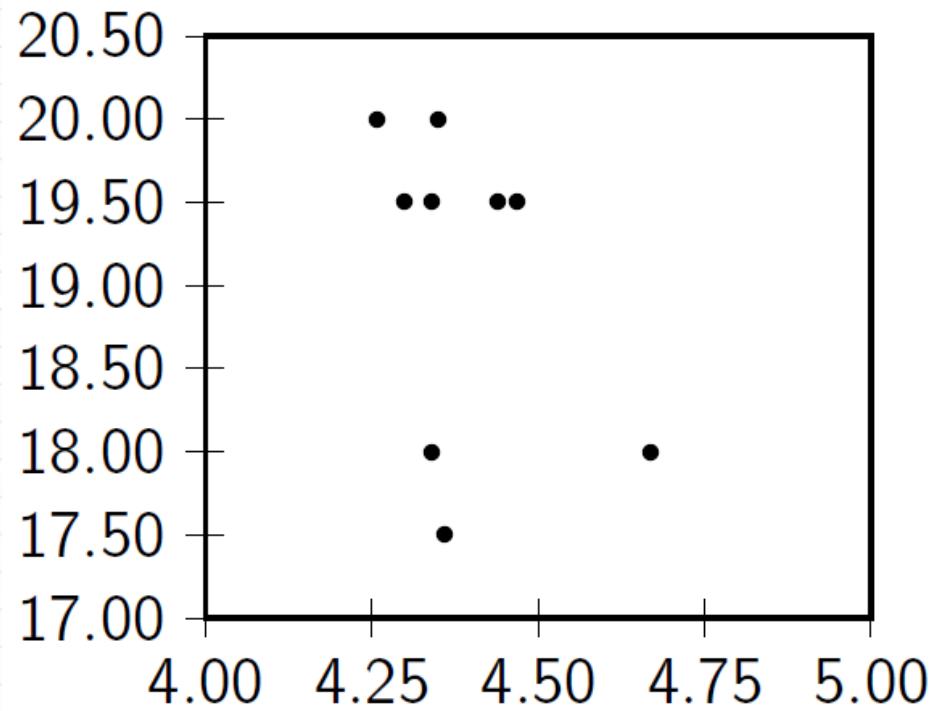


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Scatter Plot

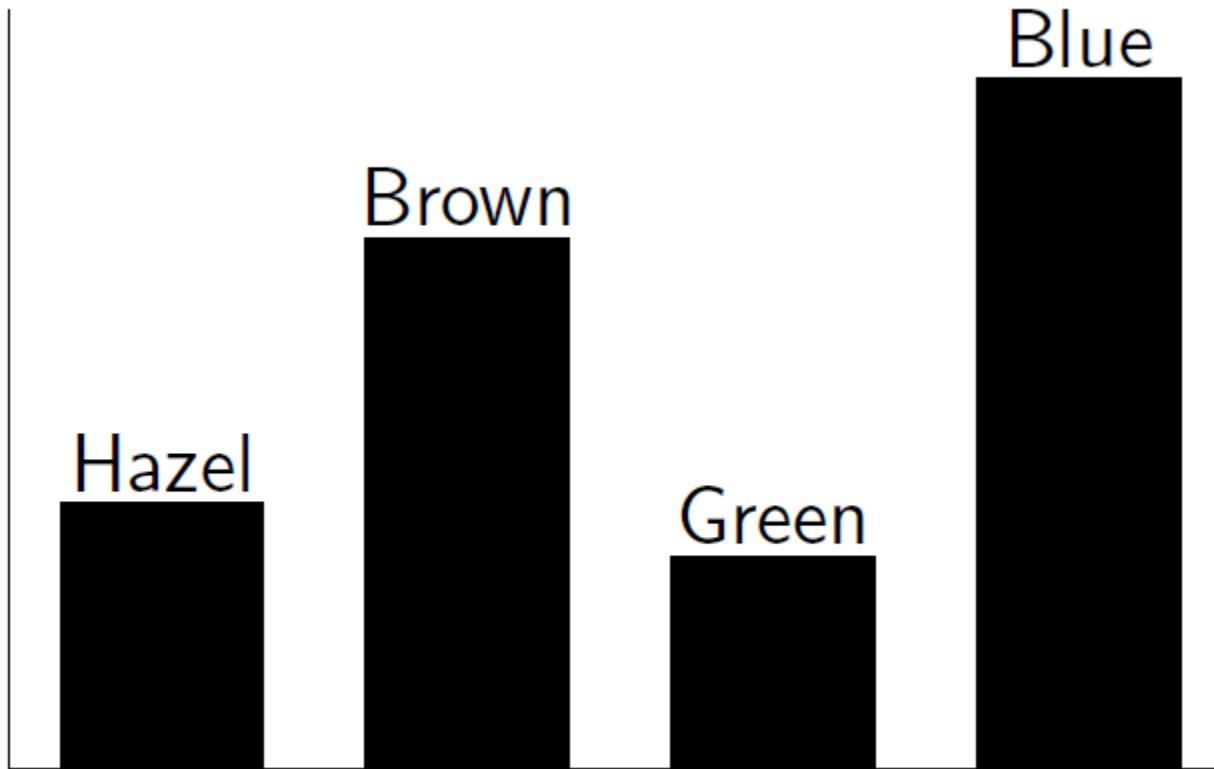
30m	4.35	4.75	4.47	4.34	4.89	4.36	4.30	4.44	4.67	4.26	4.34
Vertical	20.0	14.5	19.5	18.0	12.5	17.5	19.5	19.5	18.0	20.0	19.5



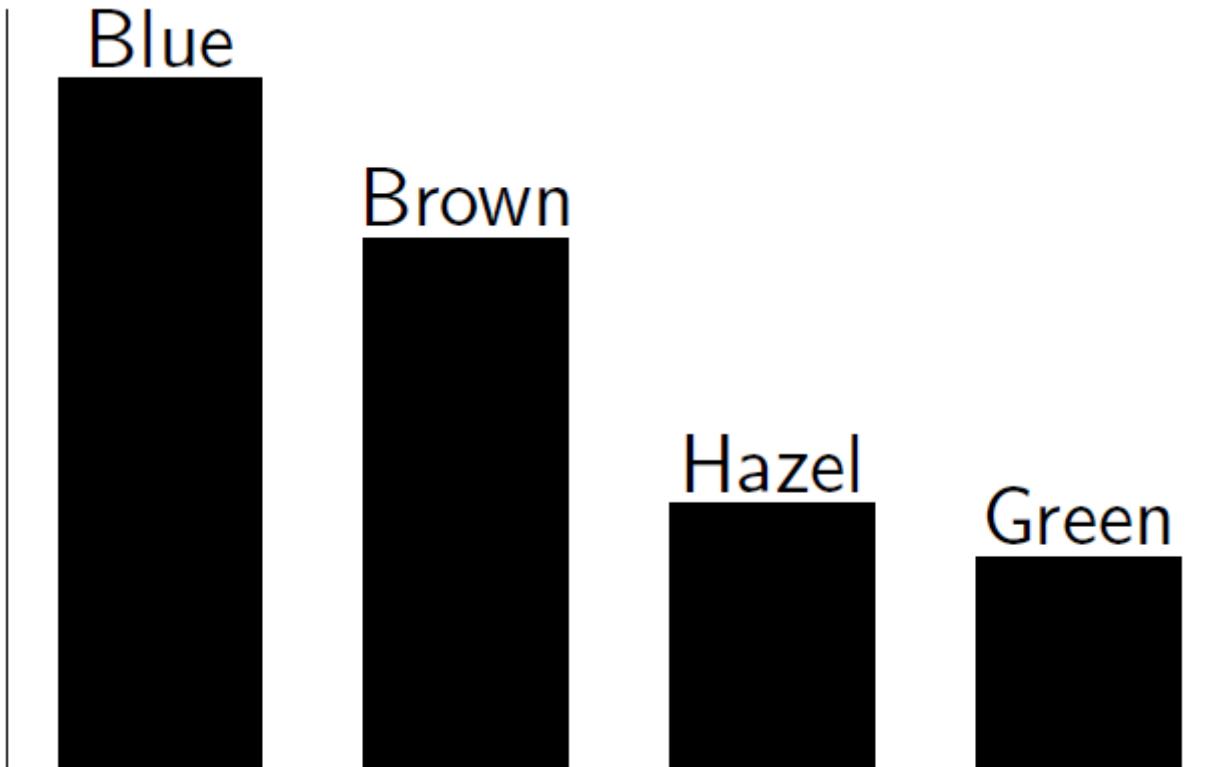
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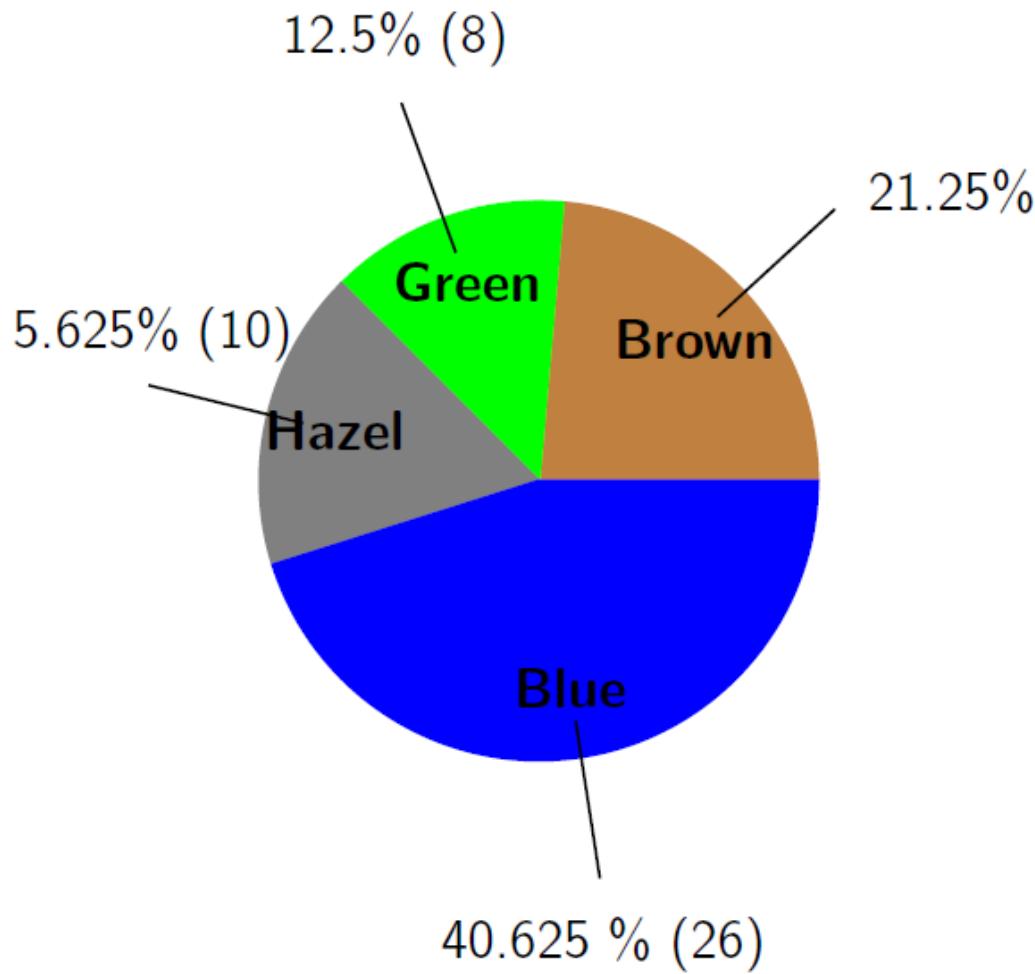
Categorical Data



Pareto

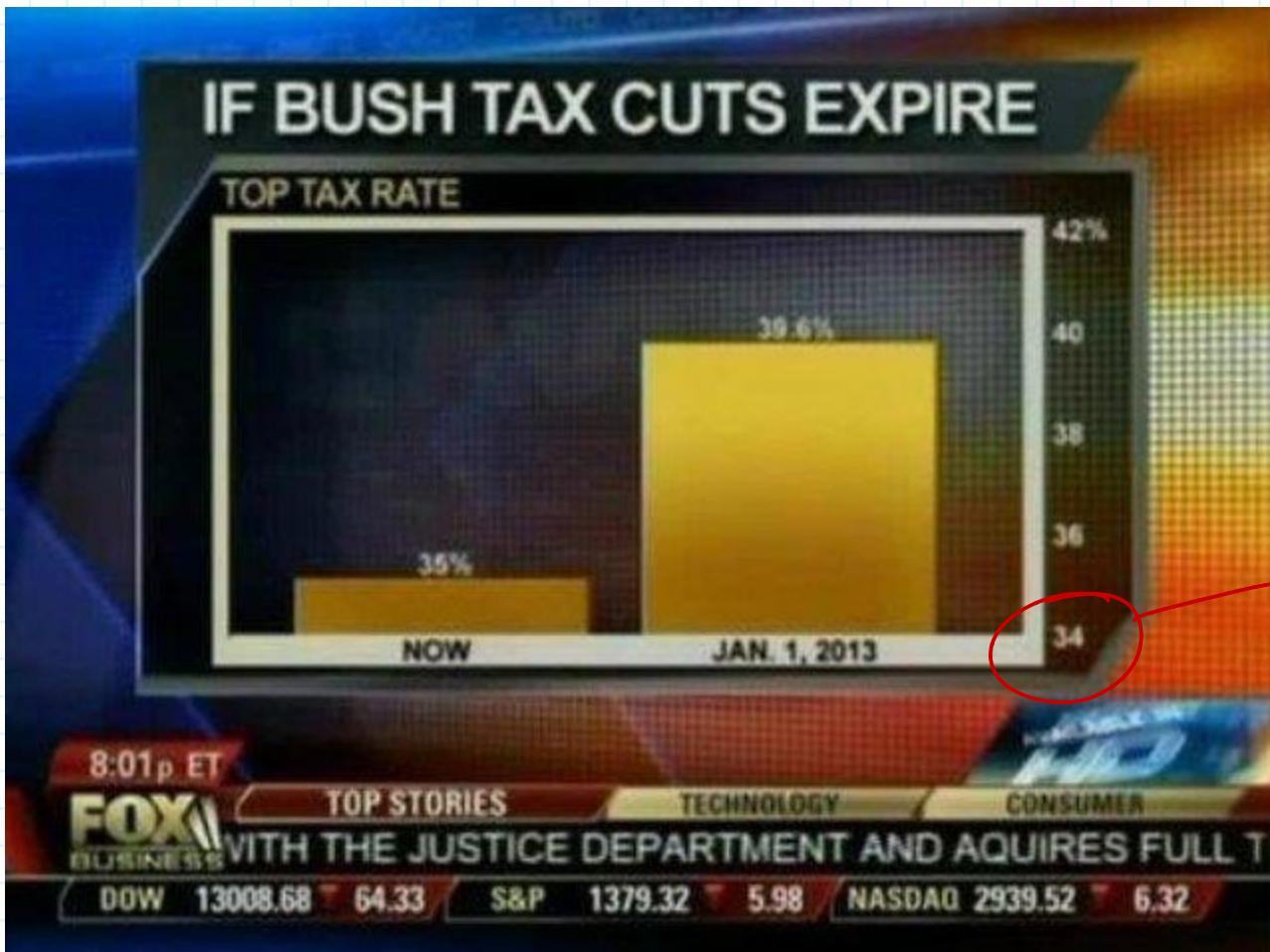


Pie Chart



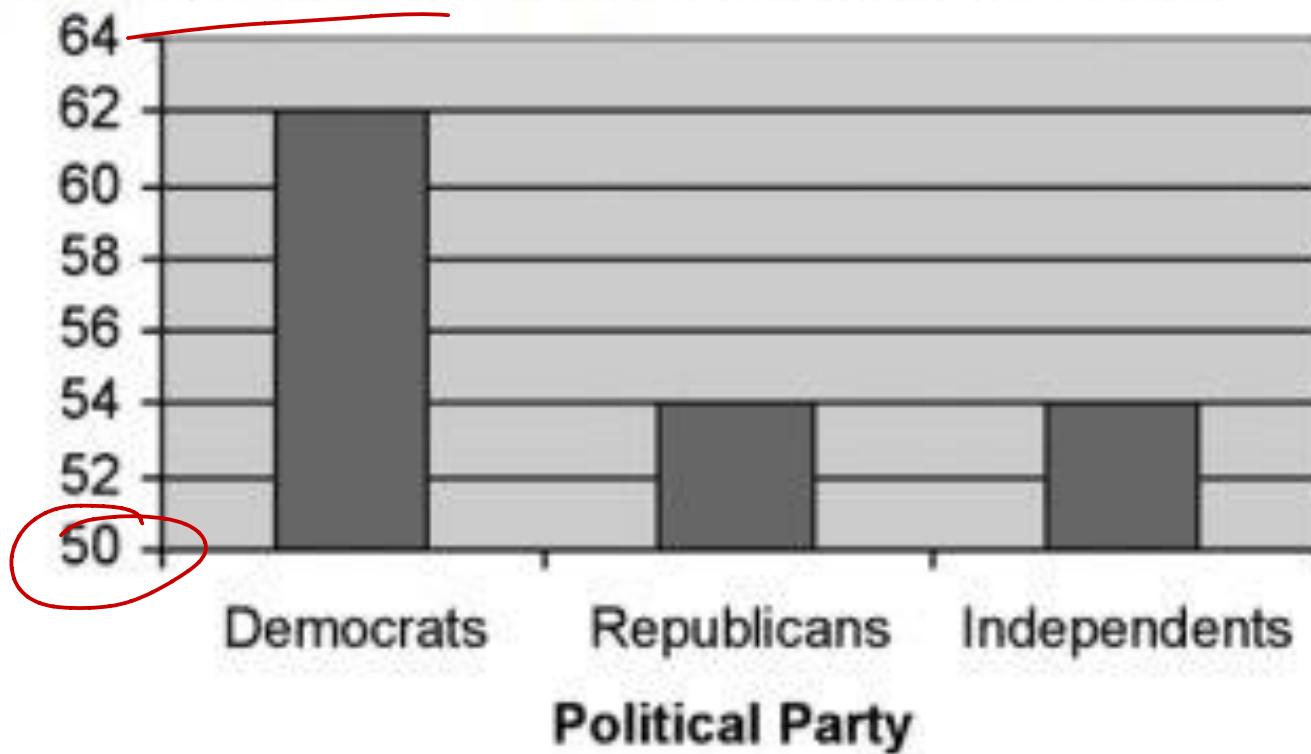
Misleading Graphs





does
not
start
@ 0

Percent Who Agreed With Court



UNEMPLOYMENT RATE UNDER PRESIDENT OBAMA



FOX
NEWS
radio

2011
SOURCE: BUREAU OF LABOR STATISTICS

CAR WAR AND A TROOP WITHDRAWAL AT THE E NAS FUT 2,292.50

CLINICAL PREFERENCE STUDY OF
ITCH RELIEF



DIRECT ACTION ON ITCH NERVES

2012 PRESIDENTIAL RUN

GOP CANDIDATES



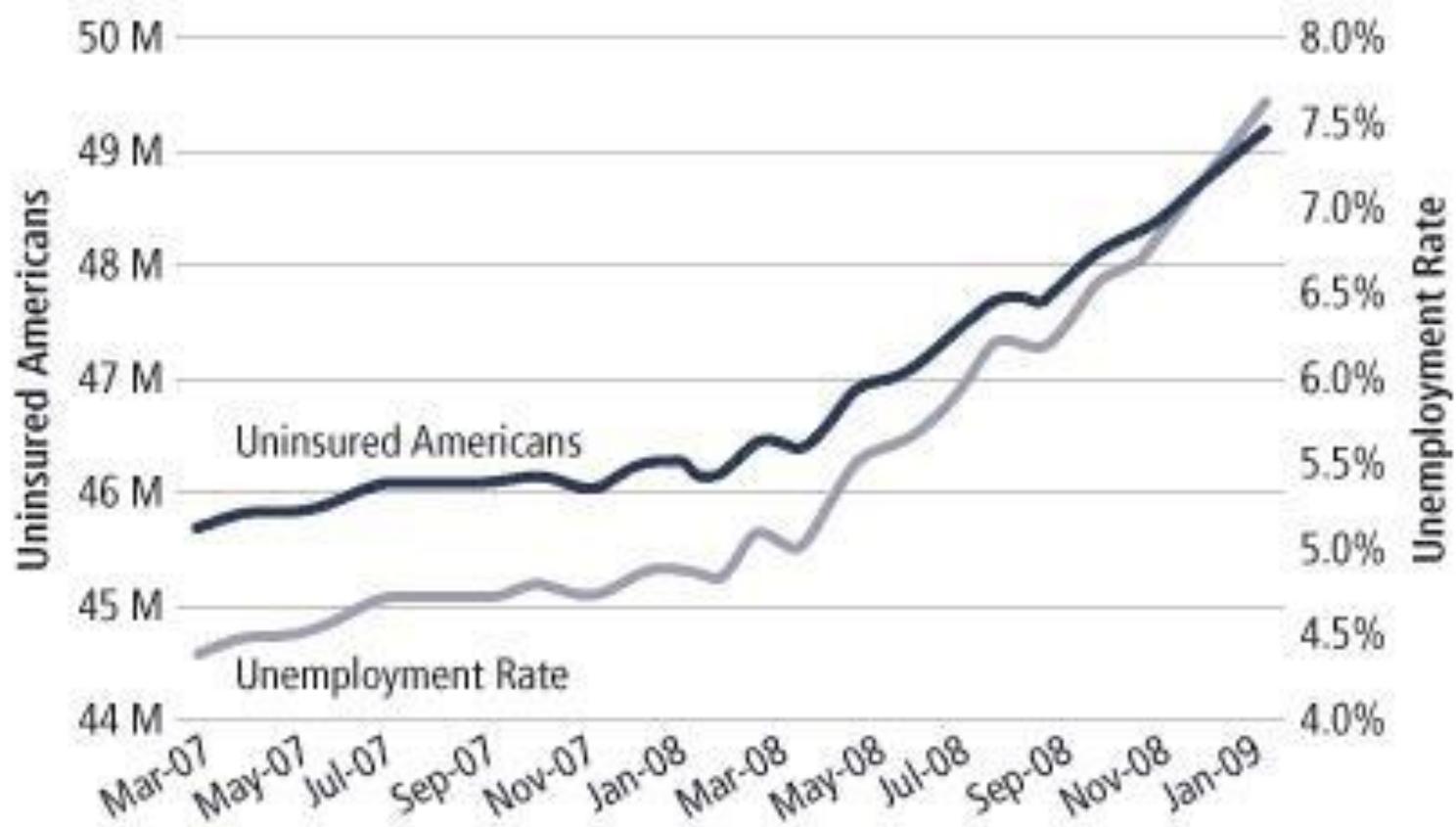
SOURCE: OPINIONS
DYNAMIC

FOX

47°

Job and Health Insurance Losses Accelerating

14,000 People Becoming Uninsured Every Day



WELFARE VS. FULL TIME JOBS

108.6M

PEOPLE ON
WELFARE

101.7M

PEOPLE WITH A
FULL TIME JOB

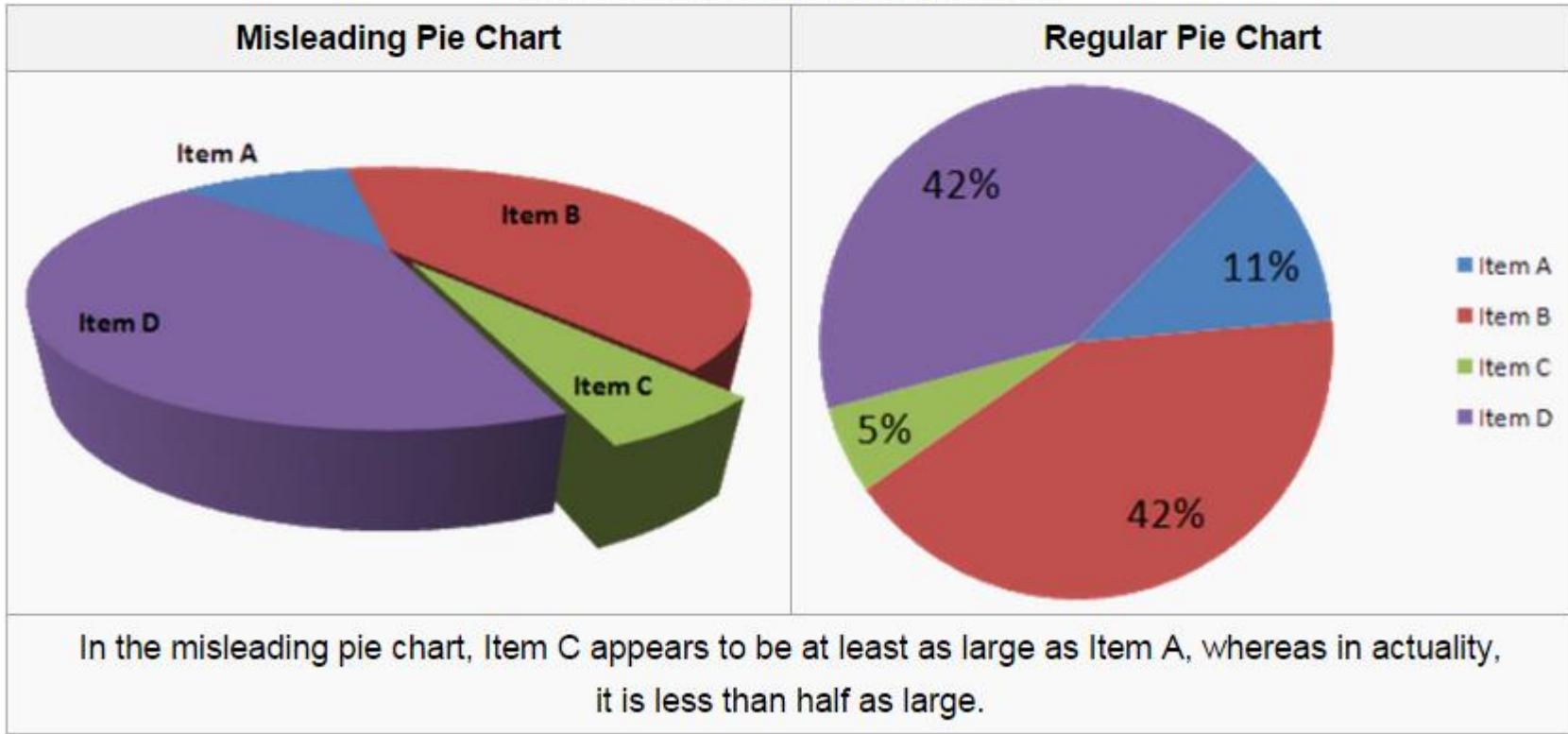
SOURCE: CENSUS BUREAU, 2011

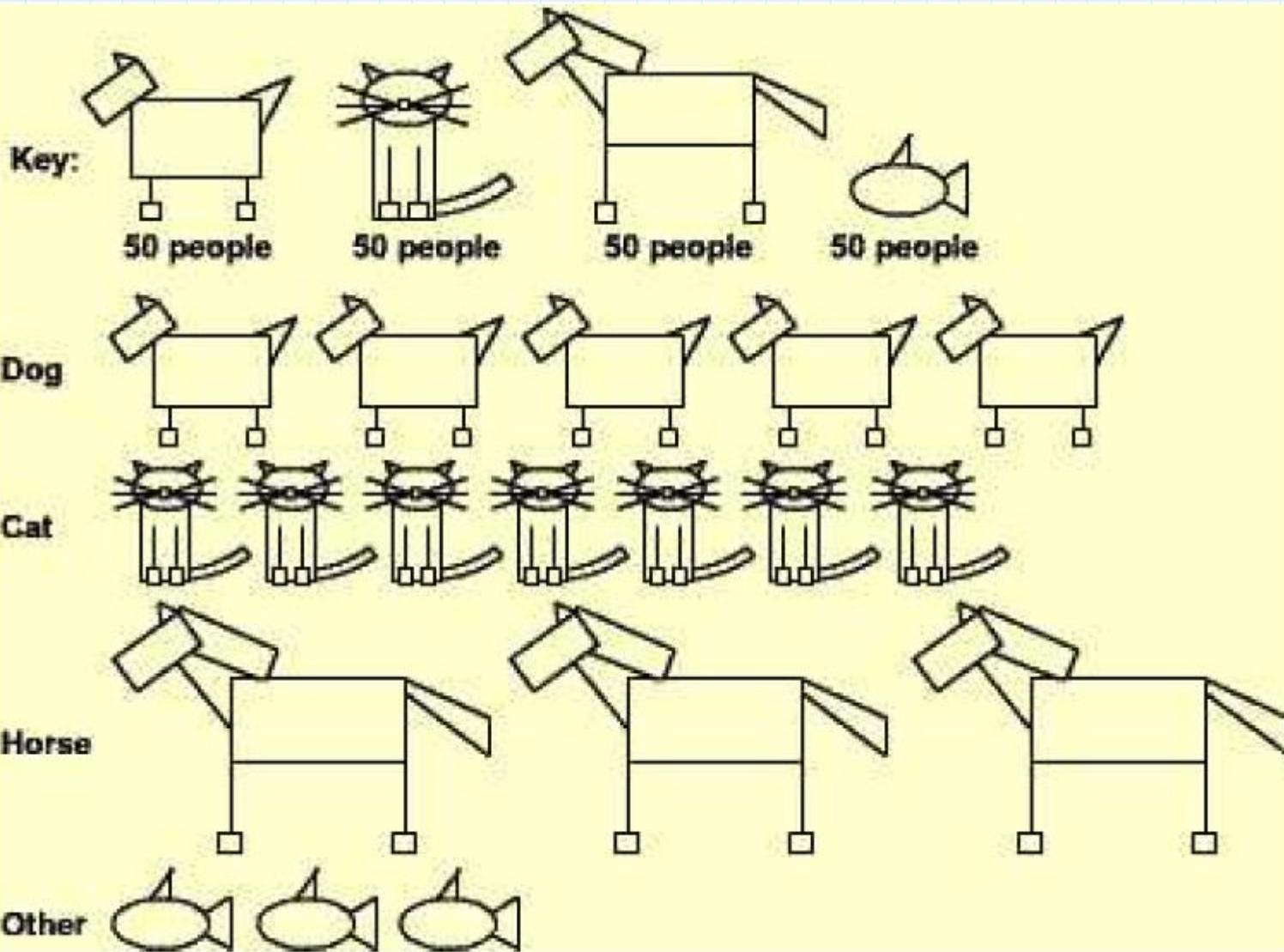


RED SOX BEAT ST. LOUIS CARDINALS 4-2 TO EVEN WORLD SERIES AT T

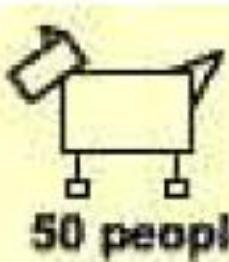
mediamatters.org

Misleading Pie Chart Comparison





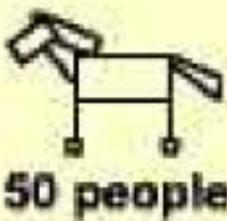
Key:



50 people



50 people

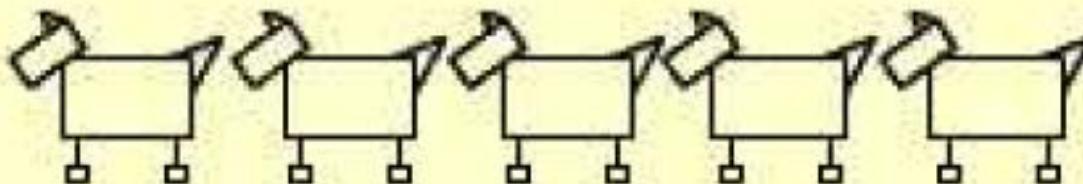


50 people



50 people

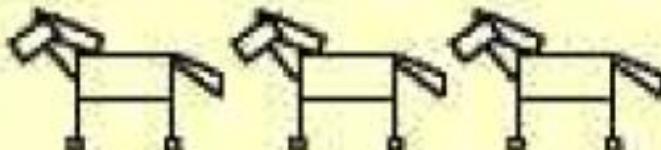
Dog



Cat



Horse



Other

