Basic Algebra 1.6

Collect and organize data using sampling

Collect and organize data using frequency tables

data information

sample each piece of info

frequency table way to organize info

tally marks

cumulative frequency table

Sampling Criteria

A good sample is:

- representative of the larger population,
- selected at random, and
- large enough to provide accurate data.

n at least 30

1 One hundred people in Lafayette, Colorado, were asked to eat a bowl of oatmeal every day for a month to see whether eating a healthy breakfast daily could help reduce cholesterol. After 30 days, 98 of those in the sample had lower cholesterol. Is this a good sample? Explain. **Source:** Quaker Oats

Your Turn

Determine whether each is a good sample. Explain.

a. Two hundred students at a school basketball game are surveyed to find the students' favorite sport.

b. Every other person leaving a supermarket is asked to name their favorite soap.

2 In an experiment, students "charged" balloons by rubbing them with wool. Then the students placed the balloons on a wall and counted the number of seconds they remained. The class results are shown in the chart at the right. Make a frequency table to organize the data.

Static Electricity Time (s)				
15	52	26	22	25
28	29	33	36	20
43	21	30	39	34
35	27	29	42	35
16	18	21	21	40

Time	freq.	
10–19	III	3
20–29	𝍸 𝍸 I	11
30–39	𝍸 II	7
40–49	III	3
50–59	I	1

goal: 4-8 categories

Your Turn

c. Make a frequency table to organize the data in the chart at the right.

Noon Temperature (°C)					
32	30	18	29	20	14
21	32	36	15	19	10
16	22	25	30	26	21

Noon Temp	Freq
10-14	11
15-19	1111
20-24	1111
25-29	111
30-34	1111
35-39	1

Static Electricity		
Time (s)	Frequency	Cumulative Frequency
15–24	8	8
25–34	9	17
35–44	7	**24**
45–54	1	25

Cumulative: running total (so far)

3 Owners of a restaurant are looking for a new location. They counted the number of people who passed by the proposed location one afternoon. The frequency table at the right shows the results of their sampling.

Age of People	Tally	Frequency
under 13	𝍸 II	7
teens	𝍸 𝍸	10
20s	𝍸 𝍸 𝍸 III	18
30s	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 II	42
40s	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 I	36
50s	𝍸 𝍸 𝍸 IIII	19
60s	𝍸 𝍸 I	11

A. Which two groups of people passed by the location most frequently?

B. If the restaurant is an ice cream shop aimed at teens during their lunchtimes, is this a good location for the restaurant? Explain.