10.2 Displaying Data 1

There are lots of types of graphs that can be used to display/organize data that's been collected.

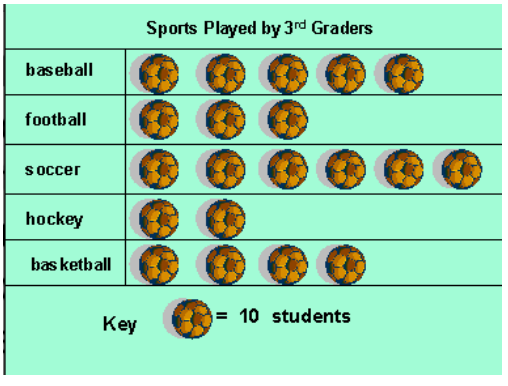
There are usually two types of data that's collected: numerical (e.g. weight) or categorical (e.g. favorite ice cream flavors).

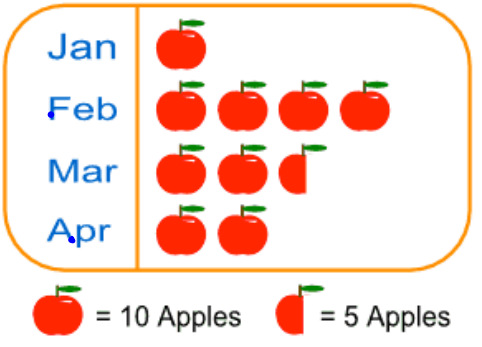
Types of Graphs:

1. Pictographs
2. Line Plots
3. Stem and Leaf Plots
4. Histograms
5. Bar Graphs
6. Circle Graphs (a.k.a. Pie Charts)
7. Line Graphs
8. Scatter Plots

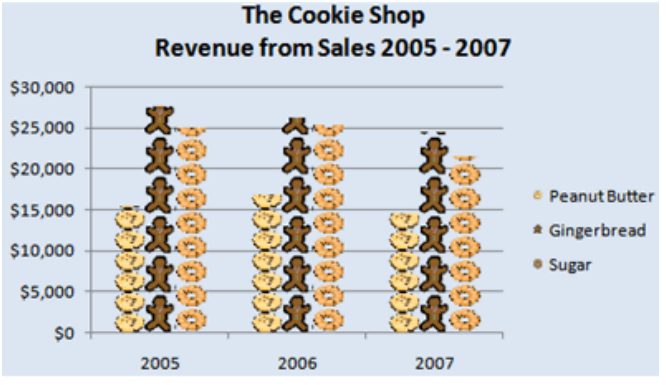
(Note: The last two in this list will be covered in section 10.3.)

1. **Pictograph**--(like a bar graph) It uses icons or pictures to represent frequency of data; on horizontal axis, plot the types of things considered and on the vertical axis, plot the frequencies of those things from the data collected.

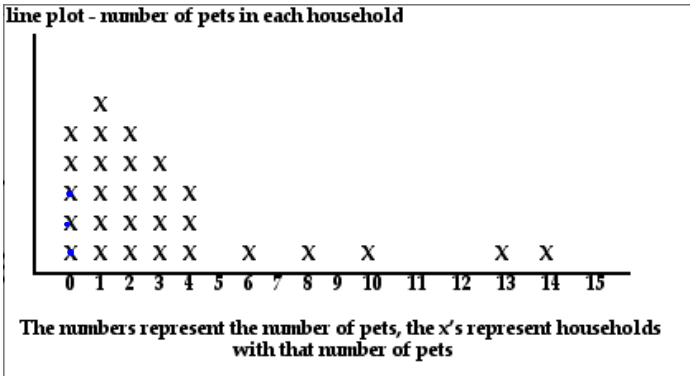


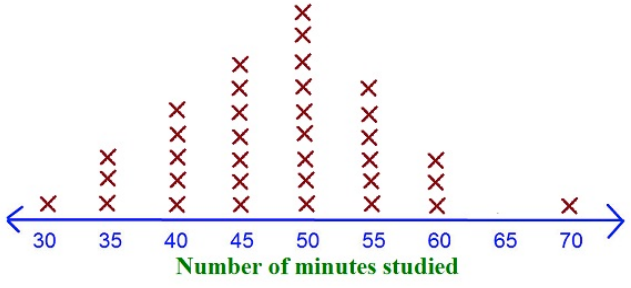


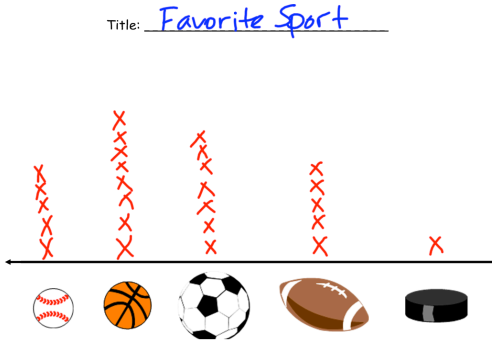
frequency table



2. **Line Plots**--Each piece of data collected shows up on the 2-d graph as a point; it's easy to read frequencies in this way.







3. **Stem and Leaf Plots** (or Graphs)--In this graph, you can still see frequencies of the data, and each piece of data is listed.

Student Heart Rates after doing 1 minute of jumping jacks	
Stem	Leaf
6	1
7	
8	4 6 8
9	2 9 9 9
10	
11	3 4
12	1 2 4 4 7 9
13	8
14	4 7 8
15	1

Key: 6 | 1 = 61

61

84, 86, 88

Infant Mortality Rates in Western Africa

Stem	Leaf
5	1
6	
7	
8	4 6 8
9	2 9
10	
11	3 4
12	1 2 4
13	8
14	4 7 8
15	1

Back to Back Stem and Leaf Plot

EXTRA PLOT!

NORMAL PLOT

Team B		Team A
6, 5, 2, 2, 1	6	1, 1, 2, 7, 7, 8
7, 7, 5, 3	7	0, 2, 5, 5, 8, 8
7, 7, 5, 5, 4, 4, 2, 1, 0	8	1, 2, 2, 6, 7, 7, 8, 8
6, 6, 3, 2, 2, 2	9	1, 1, 1, 3, 9

LARGER

SMALLER

Key: 8 | 2 = 82 points

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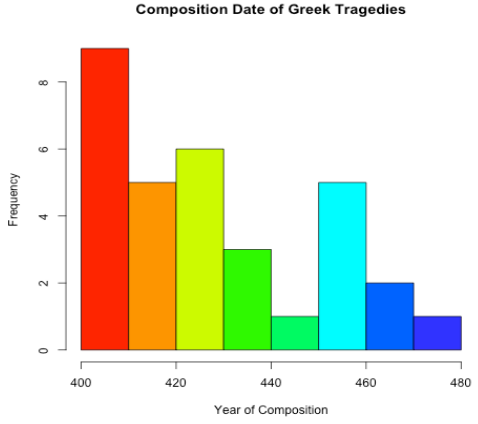
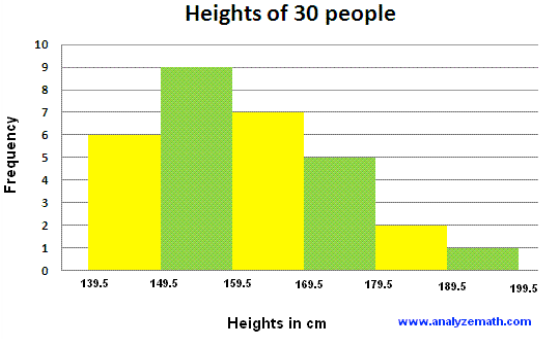
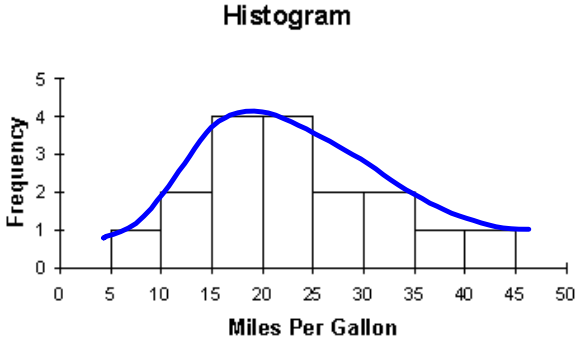
Ages of Academy Award Winners 1928-2000

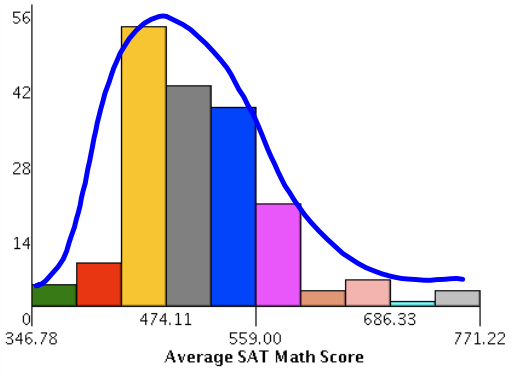
Best Actors		Best Actresses
	1	
	•	
	2	1 2 4 4 4 4 4
	•	5 5 6 6 6 6 6 6 6 7 7 7 8 8 9 9 9 9
4 4 3 3 2 2 2 1 1 0	3	0 0 0 0 1 1 2 3 3 3 4 4 4 4 4 4 4
5 5 5 5 7 7 7 8 8 8 8 8 8 8 9 9	•	5 5 5 6 7 7 8 8 8 9
4 4 3 3 3 3 3 2 2 2 1 1 1 1 0 0 0 0 0 0	4	0 1 1 1 1 1 1 2 2
9 9 9 5 8 8 7 7 6 6 6 5 5	•	5 5 8 9 9
4 3 2 1 1	5	
6 6 6 5	•	
0	6	0 1 1 2
	•	
	7	4
6	•	
	8	0
	•	

4. **Histograms**--used to display grouped data in separate, continuous intervals; plot frequency of the data (usually on the vertical axis); each interval (usually on horizontal axis) is of SAME length. Note: It's up to the creator of the graph to decide how wide each interval should be.

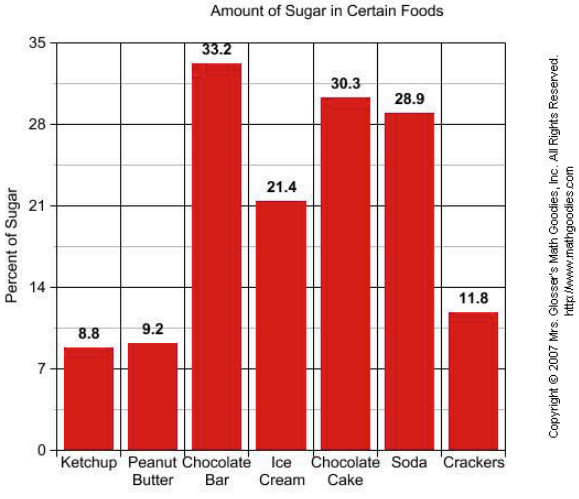


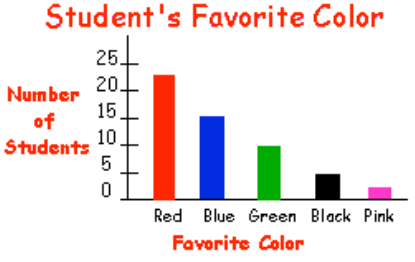


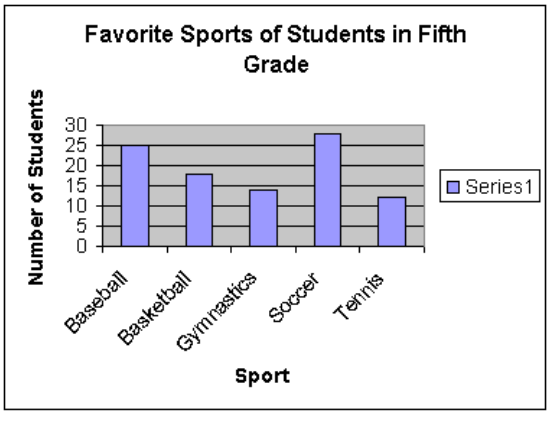


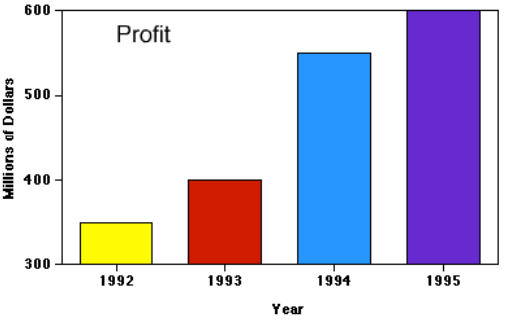


5. **Bar Graphs**--useful for making comparisons over time; looks much like a histogram but bars are typically separated with some space and it's used for discrete data, whereas histograms are used for continuous data.



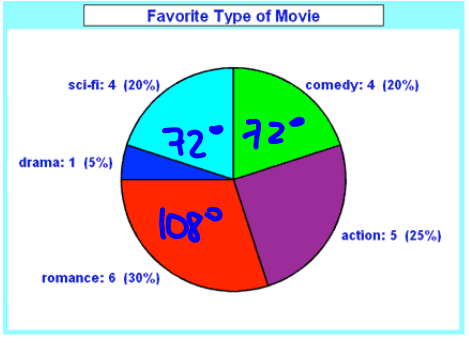


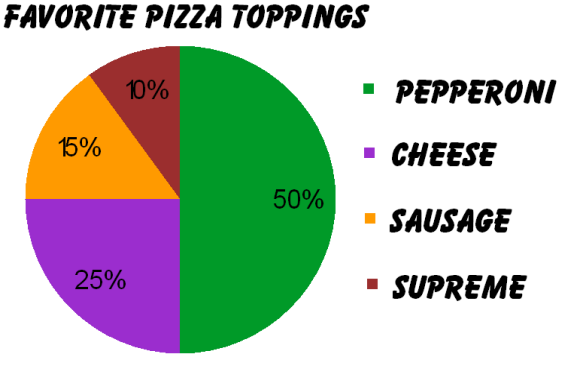


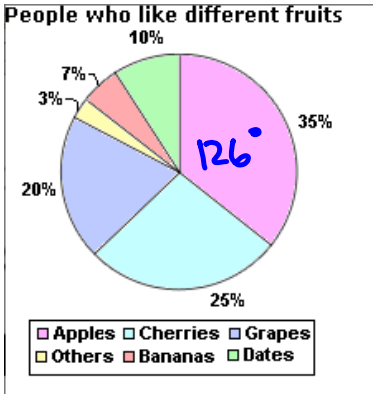


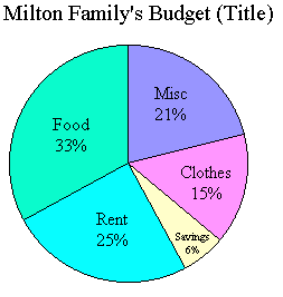
6. **Circle Graphs** (or Pie Charts)--used for comparing parts to whole.

angle of a wedge = 360 degrees * (part/whole)









10.2B #12f) E: 7% is 4.1 million sq miles

total miles^2 = ?

$\frac{4.1 \text{ million}}{\text{part}}$ is $\frac{7}{100}$ of $\frac{x}{\text{whole}}$

$4.1 \text{ million} = 0.07x \implies x = \frac{4,100,000}{0.07} \simeq 58.6 \text{ million}$

$\frac{7}{100} = \frac{4.1}{x}$

A #13) total # people = 21

pink: $.14(21) \simeq 3$

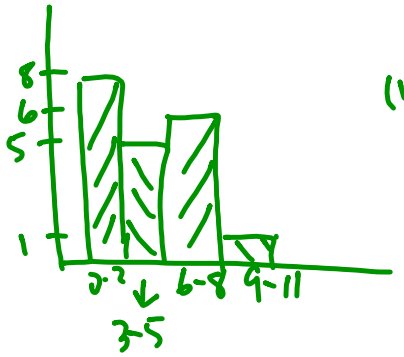
purple: $.52(21) \simeq 11$

B #18c) $\frac{8(1) + 5(4) + 6(7) + 1(10)}{20}$

mc #5a) use bar graph?

yr	pop.
1920	105 mil
⋮	⋮

10.2B #18



(b) $6+1=7$