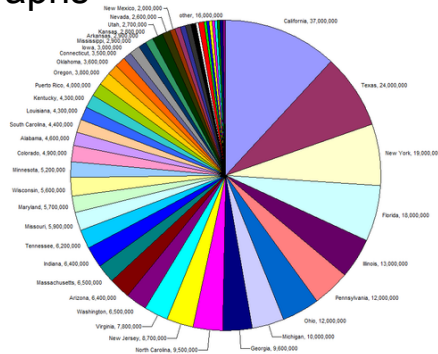


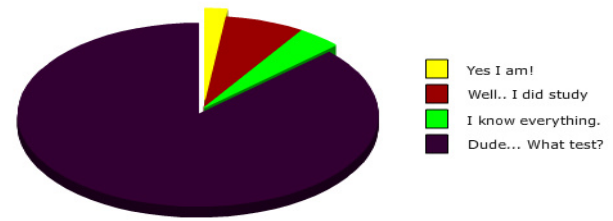
Interpreting Graphs

- ✓ Why bother with graphs?
- ✓ Line Graphs
- ✓ Constructing Line Graphs
- ✓ Bar Graphs
- ✓ Pie charts
- ✓ Scatter plots



How to Interpret Graphs

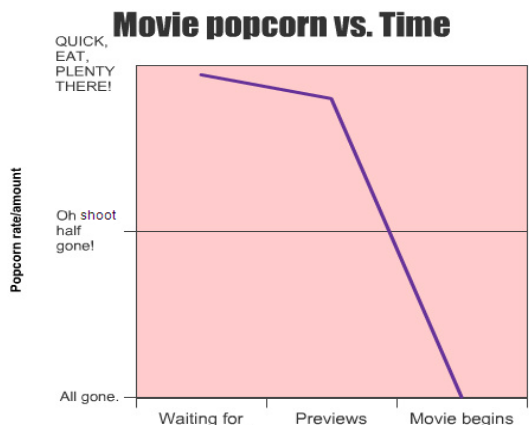
Ready for the test?



GraphJam.com

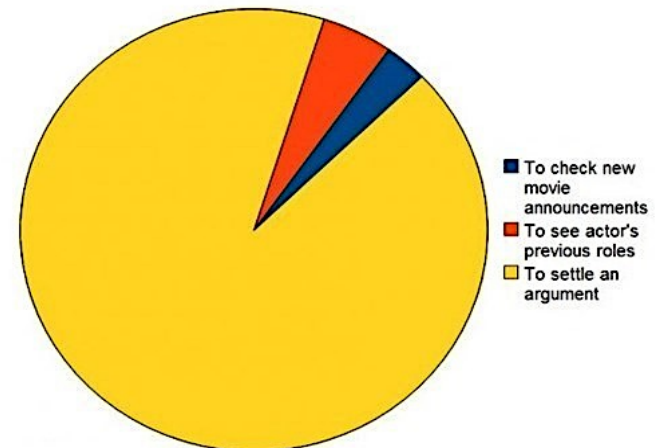
Why are graphs useful?

Graphs are a quick way to _____



Graphs provide a visual, as opposed to text.

Why I use IMDB



Types of Graphs

Line graphs- _____.

Bar graphs- used to _____.

Pie charts- used to compare values

(_____).

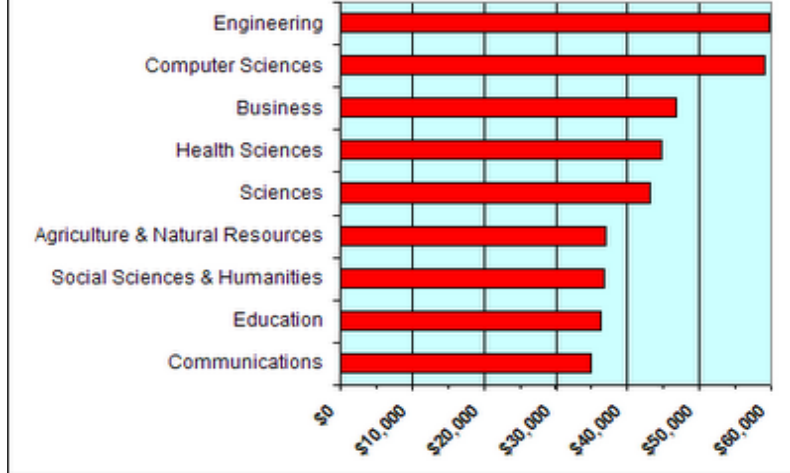
Scatter plots- used to show _____ and _____ among a _____.

There are typically two variables that you “map out” when graphing.

-The _____ variable- what is being _____/ _____

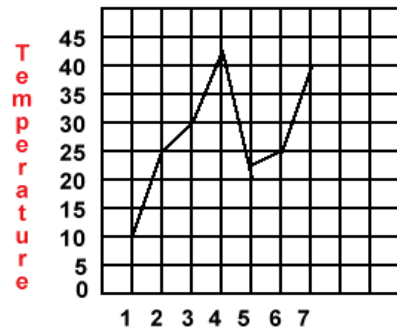
-The _____ (manipulated) variable- what is _____.

Starting salary by category of college major



Looks like all those hours of science class paid off

This is a simple line graph charting temperature. Temperature is labeled on the "y" axis and the dates (Jan 1-7) is labeled on the "x" axis.



Average Daily Temperature for January 1-7 in Degrees Fahrenheit

During the first week of January, which day was the coldest? _____

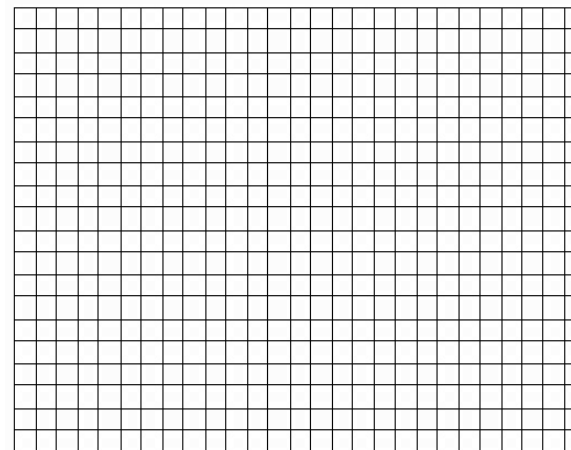
What was the temperature on January 7th? _____

Which day does the temperature peak? _____

The respondent variable is the _____, the independent variable is _____.

Practice Constructing a Line Graph

Data to graph:
 Year 0 - 10 frogs
 Year 5 - 20 frogs
 Year 10 - 60 frogs
 Year 15 - 120 frogs
 Year 20- 120 frogs



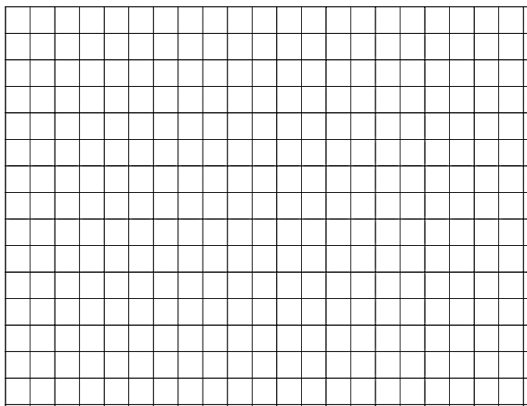
Time or trials are always placed on the x-axis

The variable goes on the Y axis.

Your numbers MUST be evenly spaced for accuracy.

What if time isn't a variable on your graph?

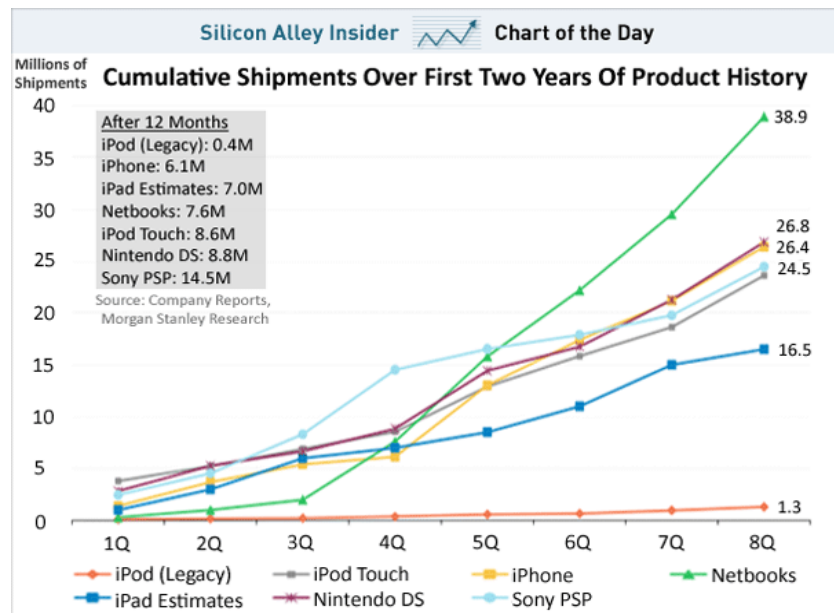
Usually the X axis has the independent variable (what you can manipulate or adjust) and the Y has the responding variable (what is measured/counted/observed)



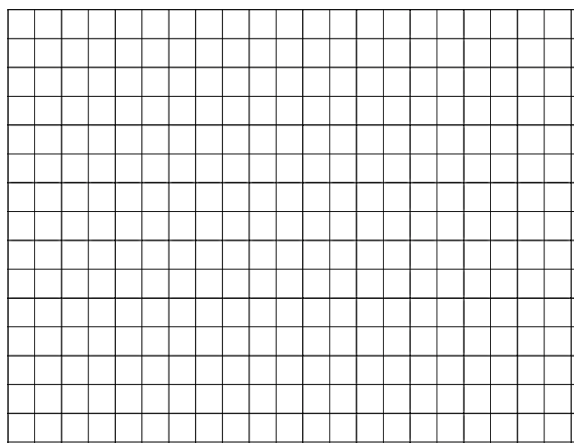
Multiple carts are pushed down a track with different sized weights attached to them. The distance traveled was measured.

Weight	Distance
1 kg	150 m
2 kg	140 m
3 kg	120 m
4 kg	90 m
5 kg	70 m
6 kg	50 m
7 kg	30 m

Line graphs can have multiple lines



Practice: What if the data is not so easy to place?



Temperature & Number of turtle eggs hatched (out of 20)

60 degrees = 3 eggs
 62 degrees = 4 eggs
 65 degrees = 7 eggs
 69 degrees = 11 eggs
 72 degrees = 16 eggs
 75 degrees = 17 eggs

Before you begin, what goes on your axes?
 Temperature range= 60-74
 Hatching range= 3-17

Graphs show us trends and relationships among data.

There are generally two types of relationships that data will exhibit: _____ and _____.

If one variable _____ and the other _____ - they share an _____ relationship.

If _____ variables _____ or _____ **together**- they share a _____ relationship.

Inverse Relationships- As one variable **increases**, the other factor **decreases**.

Examples)

As you _____, your risk for heart disease _____.

The _____, the _____
_____ I have to reach my _____.



Direct relationships occur when the two variables increase or decrease together.

Examples:

The higher your _____,
the higher your _____
rate is.

As the diameter of a pipe
increases, the flow of _____
_____.



Direct or Inverse?

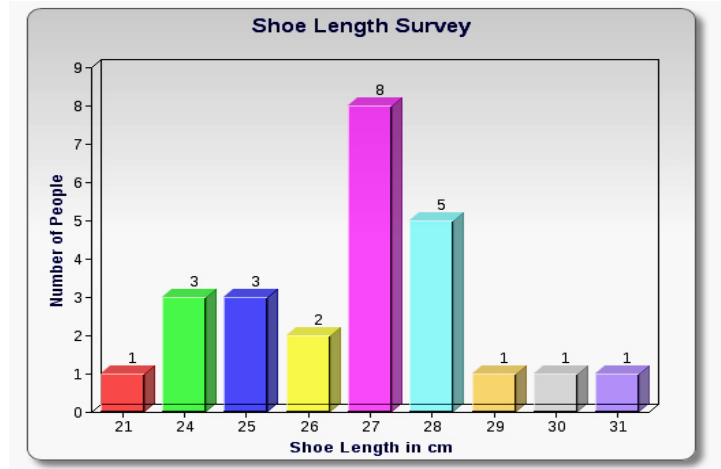
Refer to your practice line graphs.

Frogs vs. Time- direct or inverse (circle one).

Weight vs. Distance- direct or inverse (circle one)



Bar Graphs are used to _____ values.

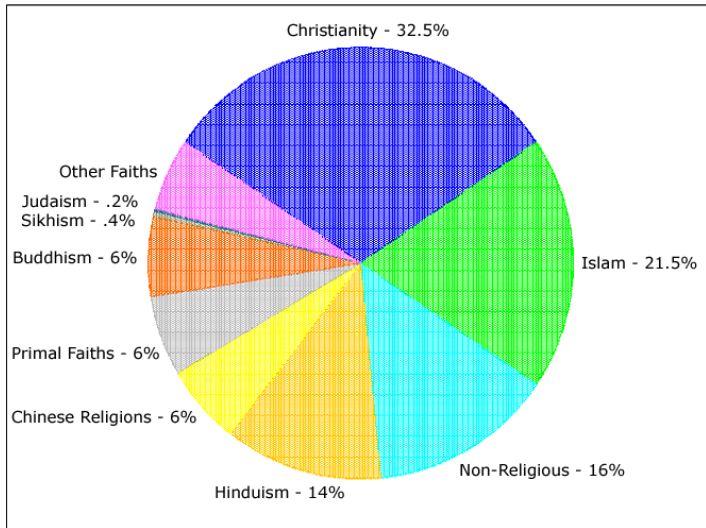


What is the most common shoe length? _____

What is the least common shoe length? _____

How many people have shoes that are 26 cm long? _____

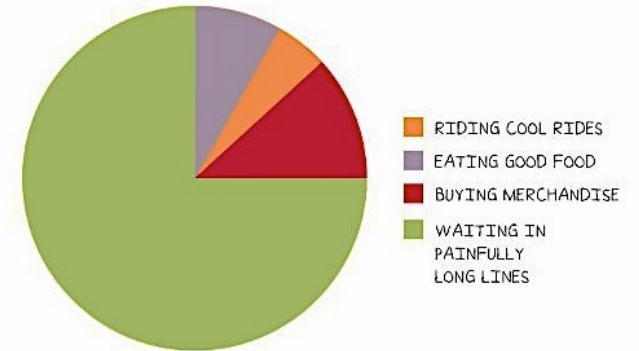
Pie charts are also used to compare values (usually as a percentage but not always).



TIME SPENT IN DISNEYLAND

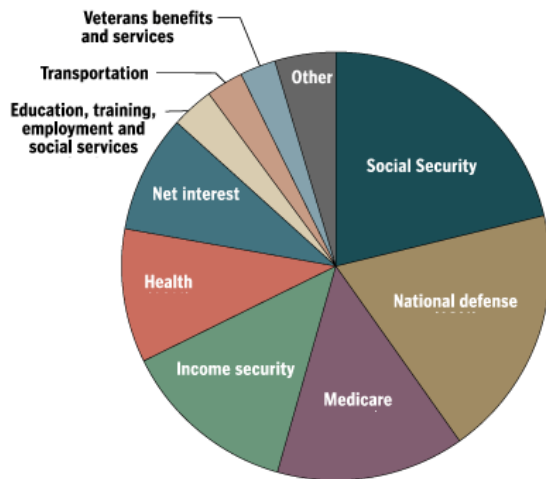
What can you expect to spend most of your time doing at Disneyland?

What can you expect to spend least of your time doing at Disneyland?

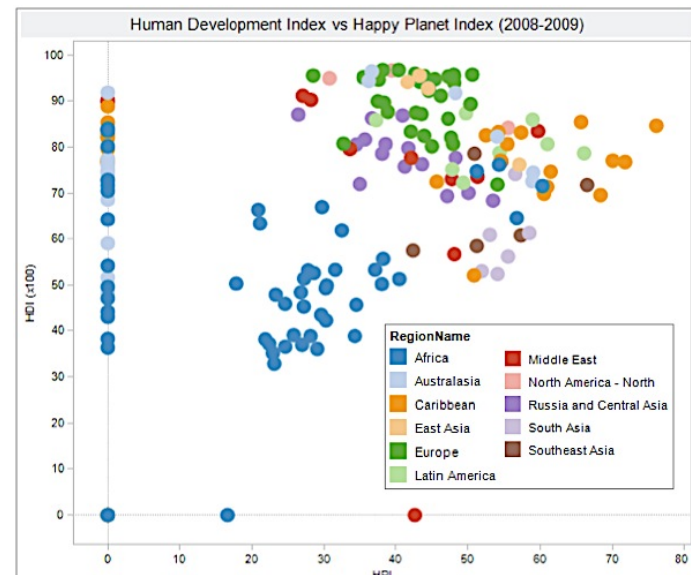


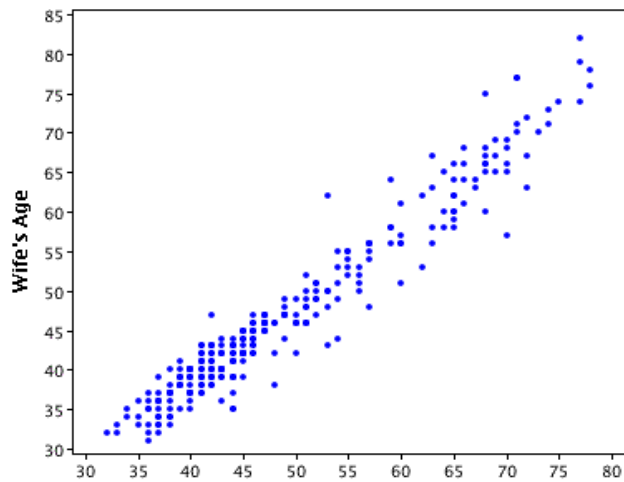
Roughly what percent of Federal spending does national defense account for?

Roughly what percent does our nation spend on education?



Scatterplots are used to compare trends among





Husband's Age

What do each of the dots represent? _____
 Approximately how old are husbands of 40 yo wives? _____
 Approximately how old are wives of 70 yo husbands? _____
 MOST ages lie within which range? _____

For each scenario, choose which type of graph would be best to use (line, bar, pie, or scatter plot).

1. To show how eating vegetables over a 10 year period can lower cholesterol. _____
2. To compare the leg lengths and antennae lengths of crickets. _____
3. To analyze the relationship between hours studying for a test and test scores among students. _____
4. To show the percentages of students in class that are male vs. female. _____.
5. To compare the salaries of 4 different professions: teacher, veterinarian, software engineer, banker. _____