



Handout #1

Rocio, this handout is a refresher on tables and graphs.

It covers a lot of ground, so if you're having problems with a specific area, tell your tutor and they can work on it with you in more detail.

1

Coordinate your coordinates!

A graph consists of a **x-axis** and a **y-axis**.

The x-axis runs from left to right.

The y-axis runs up and down.

A **coordinate** is a pair of points on the graph. For example, the coordinate (2, 1) is located at 2 on the x-axis and 1 on the y-axis.



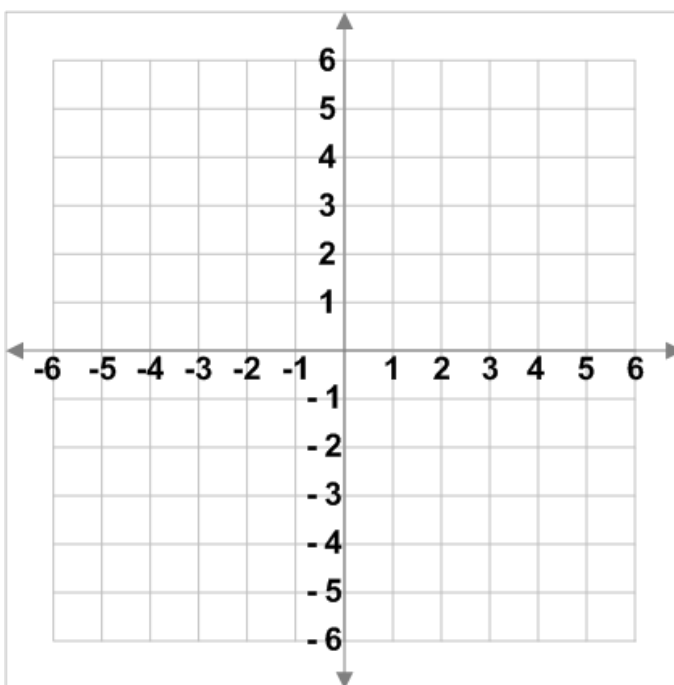
Remember!

A pair of coordinates is always written in the form:
(x coordinate , y coordinate)

In this handout, we'll:

- 1 Work on understanding and plotting coordinates on a graph.
- 2 Work on converting tables to plots (on a graph) and vice versa.
- 3 Work on understanding increments, decrements, and graph trends.
- 4 Work on understanding different graph types, such as xy-plot, bar graphs, and pie charts.
- 5 And work on understanding graph keys and legends.

Use the following plot to complete the questions below:



Label the x-axis:

Label the y-axis:

Draw the point (3, 5) on the graph:

Draw the point (-2, 4) on the graph:

Draw the point (2, -4) on the graph:

Greg's house is located at point (-2, -3). Label Greg's house on the graph:

2

Tables to Graphs to Tables to Graphs to Tables . . .

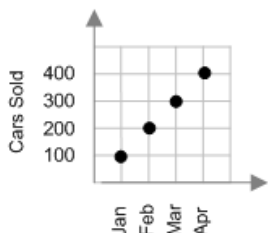
A two-column **table** of data can easily be put on a graph. Just decide which column goes on your x-axis and which column goes on your y-axis.

The trick is deciding on what **graph divisions** to use.

The **divisions** on a graph are the 'tick' marks on the x-axis and the y-axis; they determine how much one 'box' on the graph is worth!

But the important point is: **the tick marks do not always have to be equal to one.**

For example, let's look at this plot:



It can be written as this two-column table:

Month	Cars Sold
Jan.	100
Feb.	200
March	300
April	400

So notice, the divisions are not just 1, 2, 3 . . . they are the name of the month on the **x-axis** and the unit 100 on the y-axis.



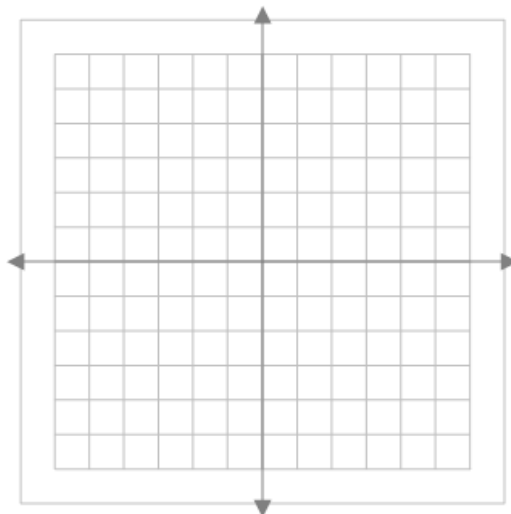
Remember!

The **divisions** or 'ticks' along an axis can be of any **uniform** value or step size that makes sense for the problem at hand.

The table below shows the number of houses sold by Really Real Realty during its first five years of business.

Use the table and the graph paper below to answer the following questions:

Year	Houses Sold
1	30
2	1,020
3	2,050
4	3,200
5	4,200



Label the x-axis with a descriptive label.

Label the y-axis with a descriptive label.

What should your division ('tick') be for your y-axis?

What should your division ('tick') be for your x-axis?

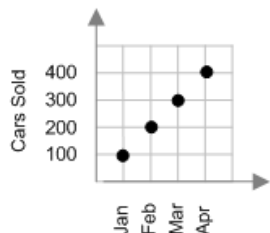
Plot the data in the table on the graph.

Connect the dots to make a **line graph**.

3

Trendy Graphs and Charts

Let's again look at the plot from the previous section:



In this chart, how much did the numbers of cars sold go-up from March to April? That's called an **increment**.

In this chart, how much did the number of cars sold go down from February to January? That's called a **decrement**.

If the increments and decrements are pretty close from step to step, you have a trend.

For example, in the plot above the number of cars sold increases by **100** each month, so it's a good guess to say that in May, the number of cars sold will be???

You guessed it, 100 more cars were sold in May than April or **500 cars were sold in May**.



Did you know . . .

In higher math, 'trends' become the **study of lines**. In higher math, any plot where the each and every increment or each and every decrement is always equal forms a **line**. Then you can easily predict what happens at any point along the x or y axis.

In higher higher math, this study becomes the study of **regression analysis** where you learn how to fit the *closest* line to a set of data that may not fit an *exact* line.



Label the x-axis and label each tick mark:

Label the y-axis. What make sense for the divisions on the y-axis?

Plot the data.

In which hour did Xavier cover the most distance?

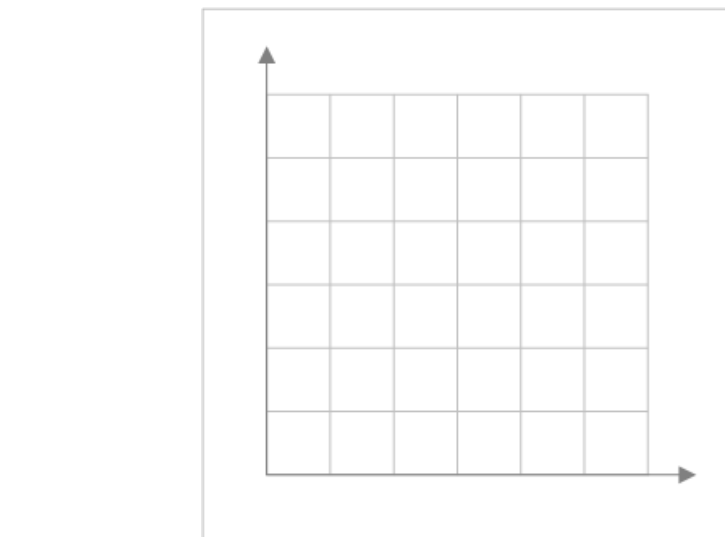
In which hour did Xavier cover the least distance?

About how fast is Xavier going, on average?

How far will Xavier have driven after 6 hours?

How far did Xavier drive after 1 hour?

Plot these points on the graph.



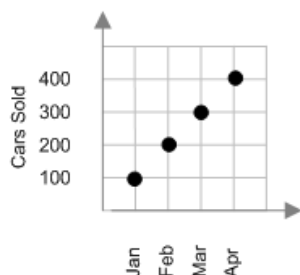
Hour	Distance
2	138
3	216
4	283
5	359

4

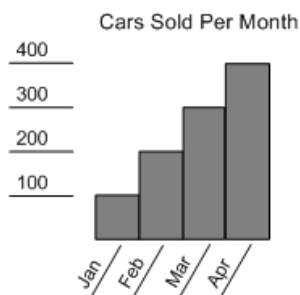
Shape Shifters

There's many many ways to display information. That's good, because there's also many different kinds of charts: such as xy-plots, line-graphs, bar graphs, and pie graphs just to name a couple.

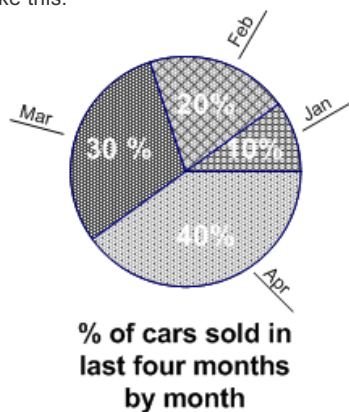
For example, the plot from the previous section:



Could have just as easily been plotted as a bar graph:

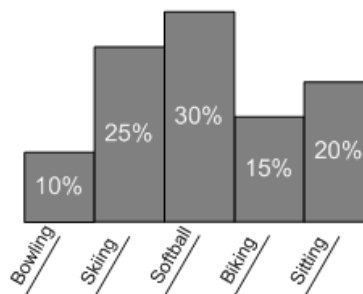


And, if you wanted a quick way to show how much each month added to the total sales over the last four months, you'd probably have used a pie chart like this:



Let's look at a survey the Yam-Yam Corporation took of its employees:

Survey of the Employees of Yam-Yam Corporation : 'What's Your Favorite Physical Activity'



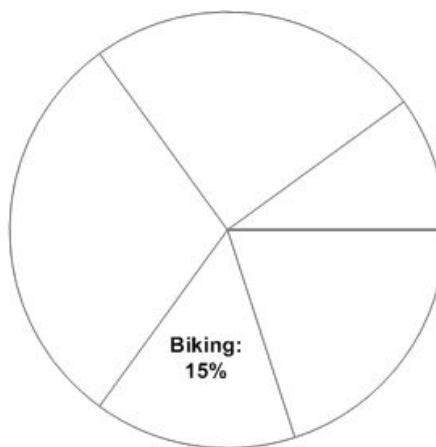
What's the least popular activity?

If the Yam-Yam was organizing an outing, what activity should they plan.

What percent of people enjoy Skiing and Biking combine?

What percent of people enjoy all the activities combined?

Finish filling in the pie chart below with the data from the bar graph:



put a title here →

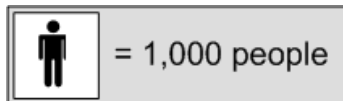
5

The Legend is the Key

What's a chart legend or key?

That's a **symbol** with an explanation of what the symbol stands for.

For example, a legend (key) may look like this:



It says, every time you see a person symbol on the chart, it stands for 1,000 people.

So this:



Stands for 3,000 people because there's 3 symbols, **each representing 1,000 people**

And this:



Stands for 2,500 people because there's 2 full symbols and 1 half symbol. The half symbol stands for half of 1,000 people or **500 people**.

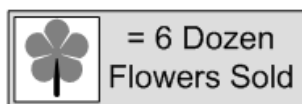
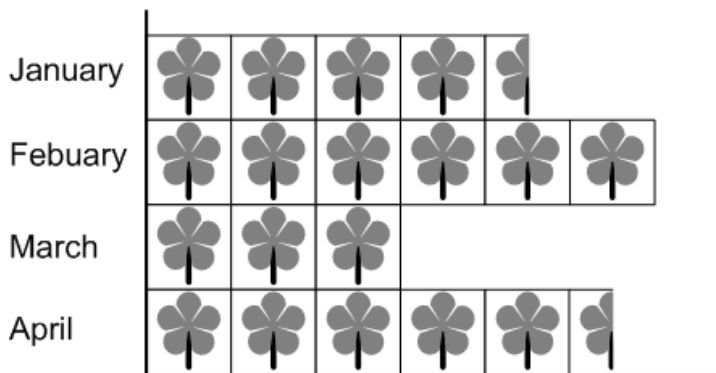


Definition: Legend

An explanatory symbol(s) appearing on a map or chart.

Also called a 'chart key' or 'map key'.

The following chart shows the number of flowers sold at Fast Freddie's Flower Front for the first four months of this year.



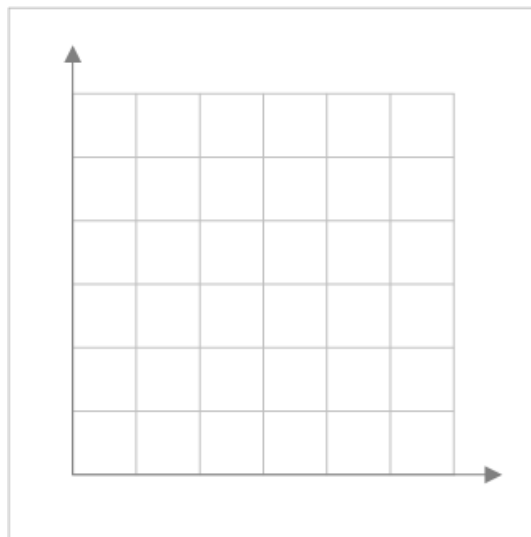
Circle the legend. How many dozens of flowers does each flower symbol represent?

How many dozens of flowers does a 'half' a flower symbol represent?

How many dozens of flowers were sold in February?

How many dozens of flowers were sold in April?

Plot the data as an xy-graph with months on the x-axis and 'dozens of flowers' as the division on the y-axis:





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-- scratch paper --

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