Section 2.2 – Interpreting Graphs

- We see graphs representing data every single day, but have you ever stopped to ask yourself what the hell does this thing even mean?
- There are a number of important aspects to help you discern the information in a graph

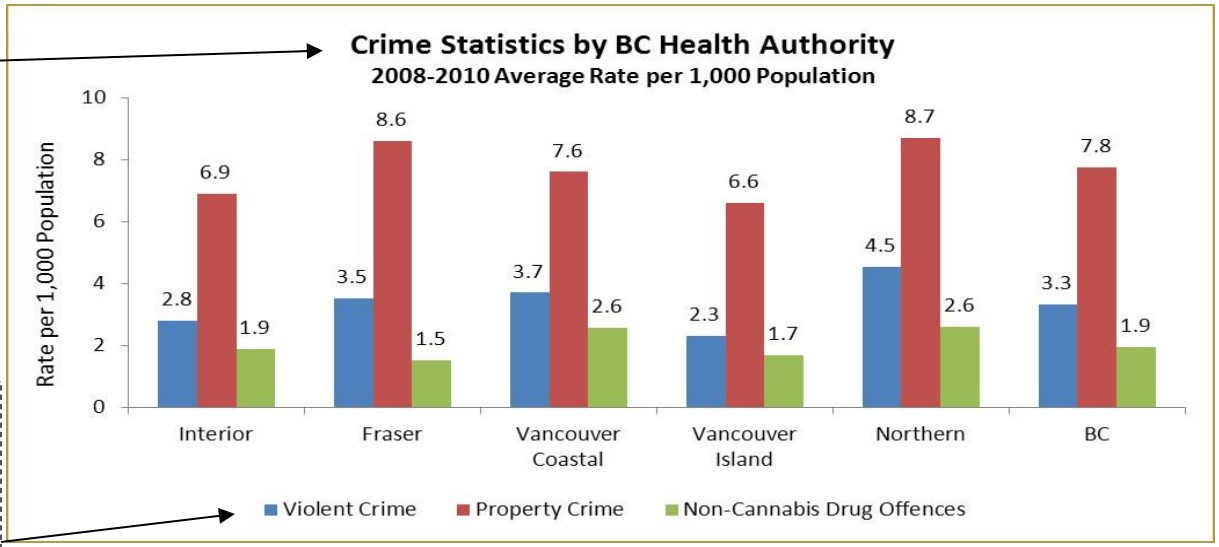
The important factors are:

- ✓ The Title and Legend
- ✓ The Axes Titles
- ✓ The Axes Scale

The Title and Legend

- ✓ A graph title is clear and communicates exactly what the graph is displaying

No Doubt about what this graph is representing



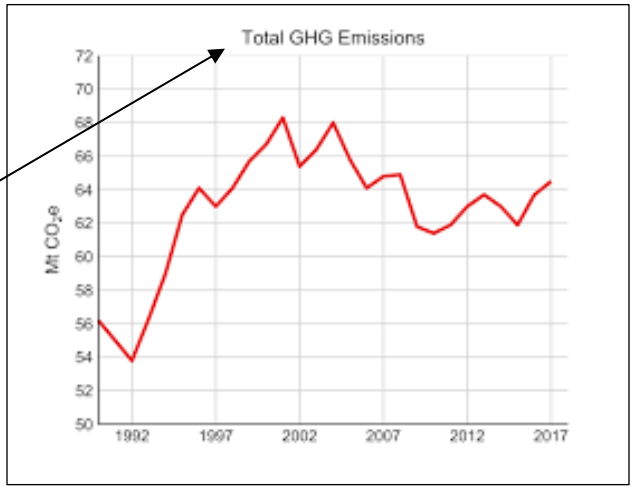
The Legend explains information within the graph

This graph is more vague

It's missing key details

- ✓ Is it a Country total?
- ✓ Global Total?

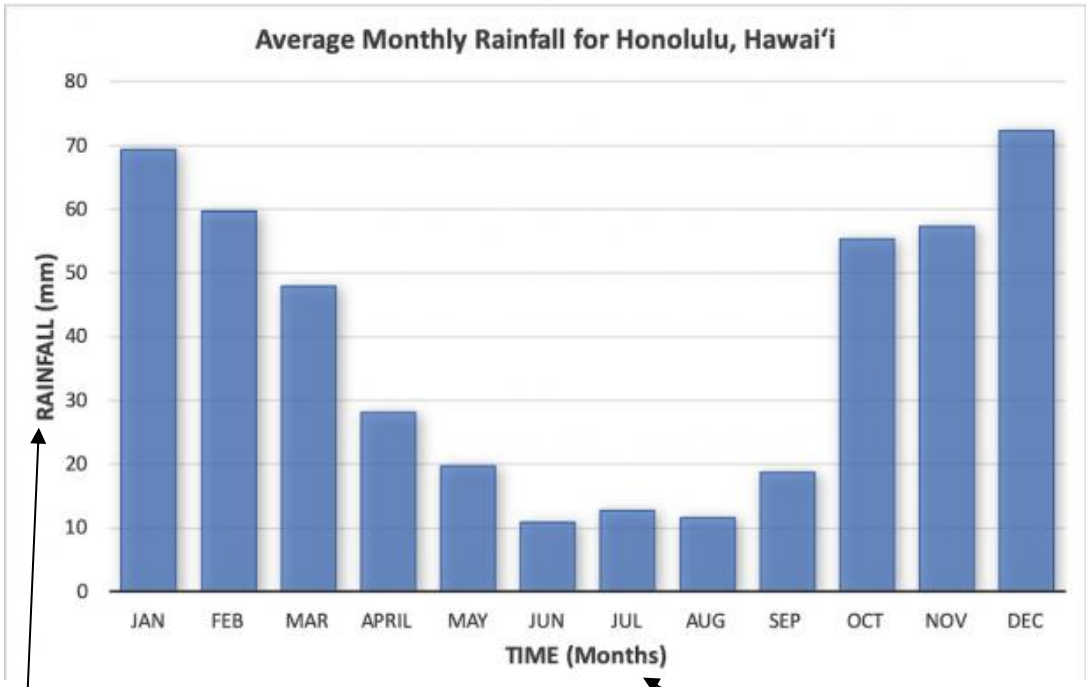
Titles need to be very obvious!



The Axes Titles

- ✓ The Axes: $y - axis \; and \; x - axis$
- ✓ The $\boldsymbol{y - axis}$ is often referred to as the **Dependent Axis**
- ✓ The $\boldsymbol{x - axis}$ is often referred to as the **Independent Axis (Usually Time)**

- The **independent axis** is titled such because **it influences the other** (see the example below)
- The **dependent axis** is titled such because it **depends on** the independent one



You can see that the $\boldsymbol{y - axis}$, the **DEPENDENT** axis, is the amount of rainfall

It DEPENDS ON what MONTH we are considering

You can see that the $\boldsymbol{x - axis}$, the **INDEPENDENT** axis, is the month (time)

Time **DEPENDS** on **NO ONE**!

It is the **INDEPENDENT AXIS**

The Axes Scale

- The **scale of the axes** has to be **consistent** (See the diagram on the next page)
- It is possible to have a **break at the start of the axis** to show a high starting point

- <u>After the break, the rest of the axis has to be consistent and equally spaced</u>

- You can see here that the $y - axis$, the **DEPENDENT AXIS (Dollars)** has a **break** at the bottom.

- Since the lowest value is around $\$500$ then has steady increases up to $\$1150$, it is helpful to show a break from $\$0$ *to* $\$500$.

- Since there are **no values below** that it does not matter.

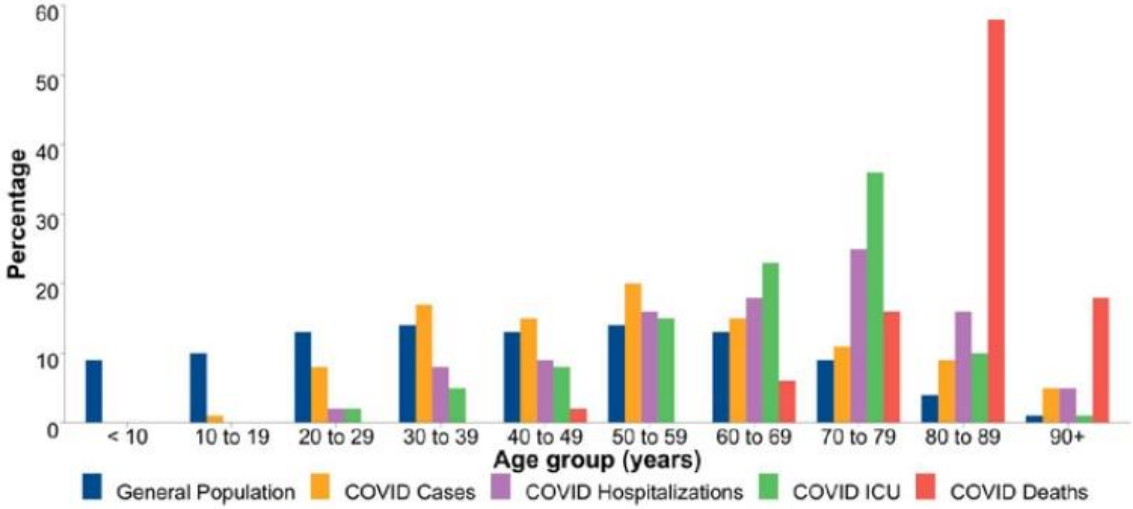
- But after that the **increases are a consistent $\$50$**

Consistency is really important, otherwise you can inadvertently effect the shape of the graph!

Let Look at One More Example

- What is this graph trying to tell us?

Figure 7: Percentage distribution of COVID-19 cases, hospitalization, ICU admissions and deaths by age, compared to the general population of BC, January 1-April 9, 2020 (**N=1,342***)



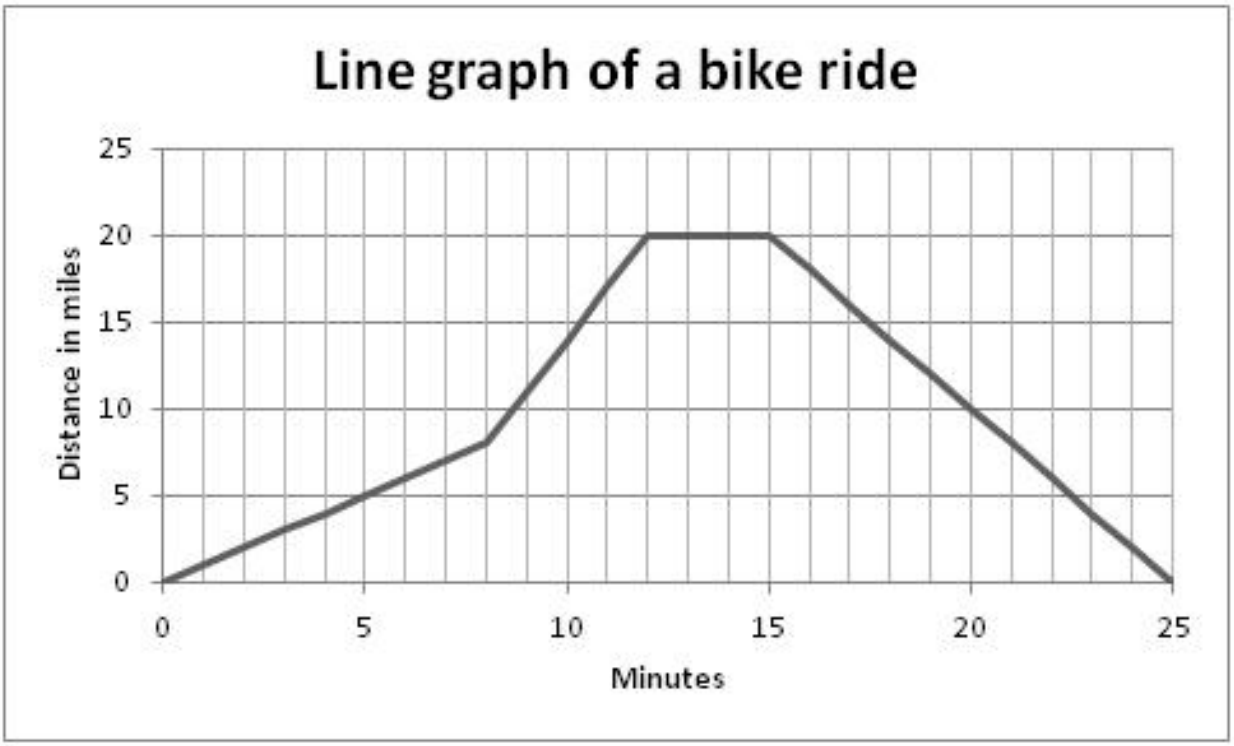
Section 2.2 – Practice Problems

Identify the key information in the following graphs. (Title, axes title and information, Lengend (if available, etc.). Have a good look at the information and explain what you think the graphs are trying to say. Is it easy to follow? Is the information clear? Can you think of ways to make it more clear or is the graph misleading?

This section is all about thinking and communicating your thoughts. Your answer should demonstrate thought and exploration of the concepts. There are no wrong answers, but I challenge you to dive into the assignment.

What are the main points of information in the graphs below. Share your thoughts on what you think the graphs are telling you.

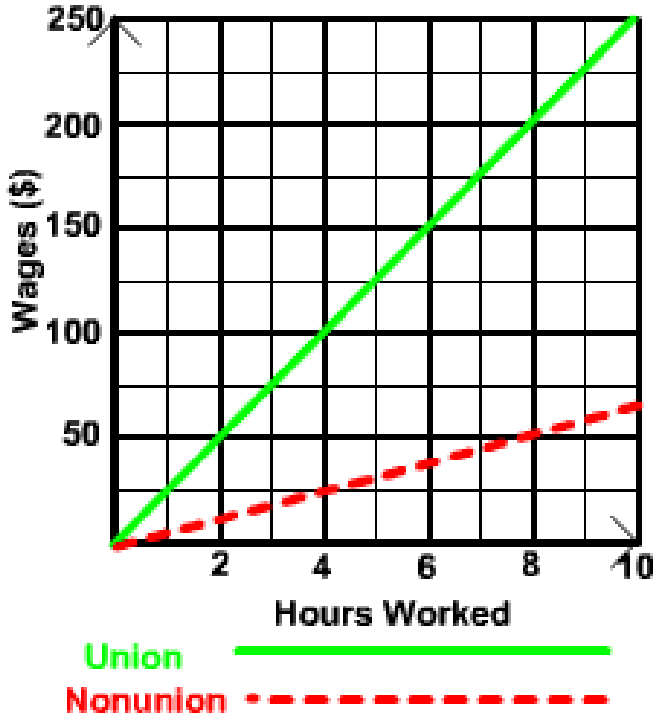
Graph 1



Thoughts

Graph 2

Thoughts



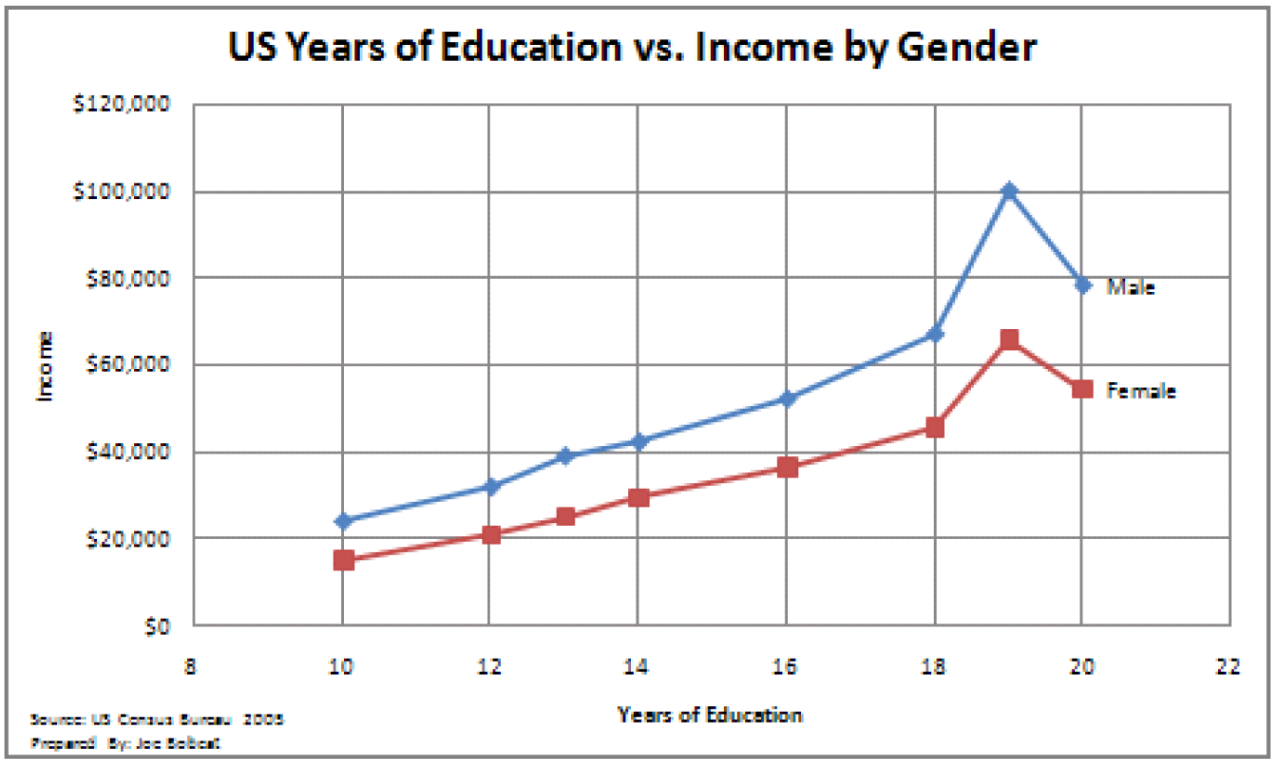
Graph 3

Thoughts

Study Time vs. Grades

Student	Study Time (hours)	Grade
Bob	2	84
Carlos	4	91
Cindy	5	92
Florence	3	89
Kim	4	88
Lori	4	93
Marisa	1	78
Pat	2	89
Thomas	5	94
Wendy	2.5	87

Graph 4



Thoughts