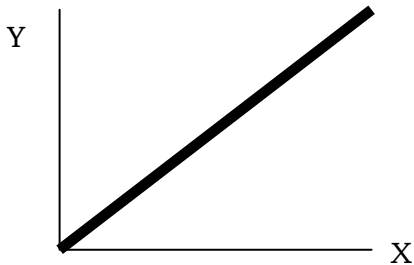


When you are given two variables, their relationship can be expressed as a graphical relationship. The Regents exam has these types of graphs again and again, and you will see them on EVERY exam starting with Topic 2. So, let's make sure you are used to them.

Save this sheet as part of your notes!

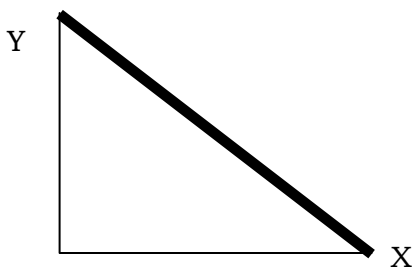
**RELATIONSHIP #1: DIRECT**



For this relationship, when the INDEPENDENT variable **increases**, it causes the DEPENDENT variable to also **increase**.

For example, the relationship between time and height for you from age 0 through 14. As time INCREASES, your height INCREASES.

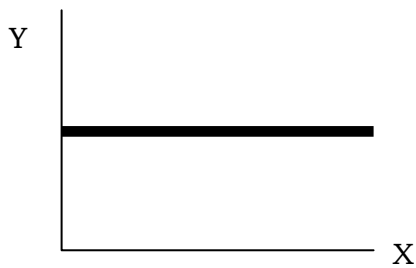
**RELATIONSHIP #2: INVERSE**



For this relationship, when the INDEPENDENT variable **increases**, it causes the DEPENDENT variable to **decrease**.

For example, the relationship between the amount of time you spend working out and your weight. The more time you spend working out, the lower your weight will be.

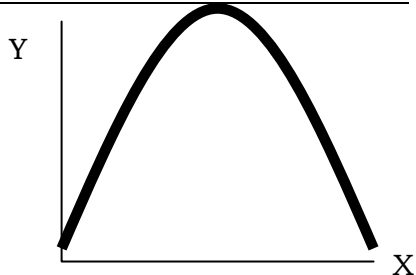
### **RELATIONSHIP #3: STATIC**



For this relationship, when the INDEPENDENT variable **increases**, it causes the DEPENDENT variable **does not change**. In other words, they have no real relationship.

For example, the relationship between the price of a junior bacon cheeseburger at Wendy's vs. the amount of time it takes for you to get to school. If the amount of time it takes for you to get to school increases, the price of the cheeseburger stays the same.

### **RELATIONSHIP #4: CYCLIC**



For this relationship, when the INDEPENDENT variable **increases**, it causes the DEPENDENT variable **will go up and down in a predictable (cyclic) manner**.

For example, the relationship between time of the month and the phase of the moon. As the days of the month increase, the phase will vary from full -> new -> full in a predictable fashion.

When doing these relationships, ask yourself the following two questions:

- 1.) Which of the two variables is the INDEPENDENT variable?
- 2.) Then use this sentence:

“As \_\_\_\_\_ (the independent variable) increases, what happens to \_\_\_\_\_ (the dependent variable)?”

It will help you find the true relationship.