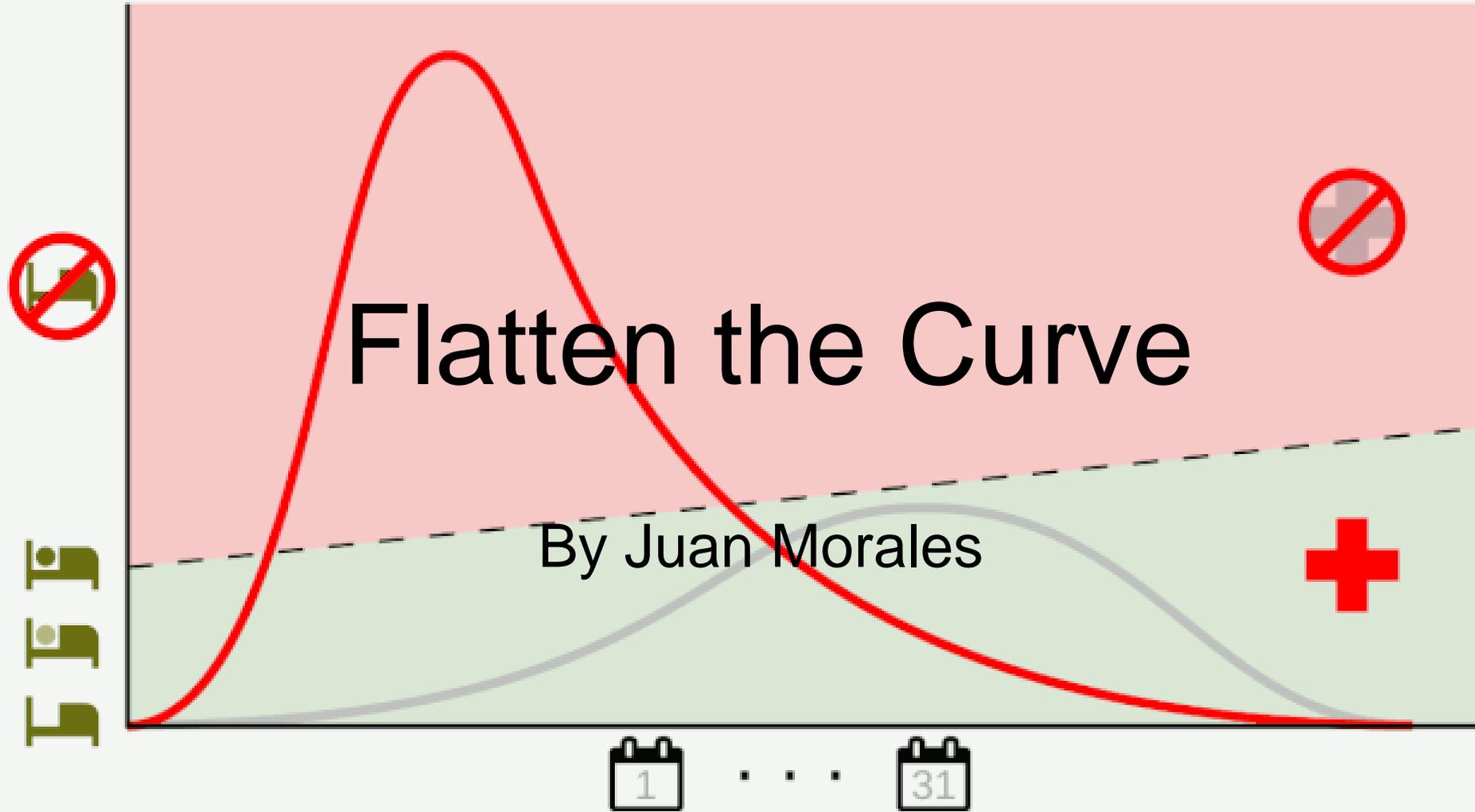# Flatten the Curve

By Juan Morales

Assignment 1: Flatten the curve.

The phrase "Flatten the curve" means to take more precautions to prevent the spread of Covid-19. It refers to an exponential function, which is far different from a linear function. A linear function increases or decreases at a constant rate. An exponential function increases, but at a faster pace and a nonconstant rate. Linear functions make straight lines but exponential functions are curved lines. "Flatten the Curve" means to change the form of the exponential function so that it begins to curve at a slower rate until it becomes flat and eventually curves downwards. If we take precautions, the number of cases will begin decrease ergo "flattening the curve". One person who is tested positive can lead to 1296 people infected but if precautions are made, that number will be much lower. Precautions have really helped. We have been able to stay under a certain limit where hospitals can help people which is very significant. The more we take precautions, the sooner we will be able to go back to our normal lives.

Assignment 1: Flatten the curve.

"But if no one is worried, that's when you should worry"
I think it means that we should only be worried, not necessarily scared, if other people are not in panic and worried. If no one is taking anything seriously, then other things, most likely negative, will happen.

"The only thing to fear is the lack of fear itself"

I think it means that we should only be scared, if other people are not scared. In other words, we should be scared if no one is taking action and in ignorance.

Assignment 2: Data Analysis

States where giving a different color to differentiate the number cases. A dark orange was chosen for the high number of cases and a whitish yellowish color for a low number of cases. I chose five states. New York was Dark Orange,New Jersey was Dark Orange, California was Dark Orange, Georgia was Lighter Orange, and Montana was Light Yellowish Color. They used proportions to determine the numbers and colors. Then the population was calculated with the help of the Census. They used the equation $x/100k = 170{,}268/11.1$ million. (That is the the equation used for New York State not including New York City)   **NYS cases per 100K(Not including New York City) =** 170,268
Wyoming cases per 100K = 933

Assignment 2: Data Analysis

You can conclude that the states with the higher population have the most cases. Also, you can tell that more states have higher cases in the east than the west because of the color of the states. That could be because they have dense populations. Massachusetts is a rather small state but it has over 100k cases. Cases will continue to increases but if we take more precautions, we can help reduce the cases. Some of those precautions were to close schools, malls, churches etc. We need to wear masks and stay 6ft apart. Almost every school district have been closed. Only a few are still open. Whichever state you live in is very important. If you live in a state with less cases, you have less to worry about. But if you live in a city like New York City, you have to be extremely careful, as you should already be. As long as we take precautions and be careful, we will get through this.

Assignment 3: Face mask production

1. We need masks to go outside. So lets say your family has a piece of fabric that measures 54 inches wide and 3 yards long. To make a mask, you need a rectangular piece of fabric that is 9 in. by 8in. How many 9x8 inch rectangles can you cut?
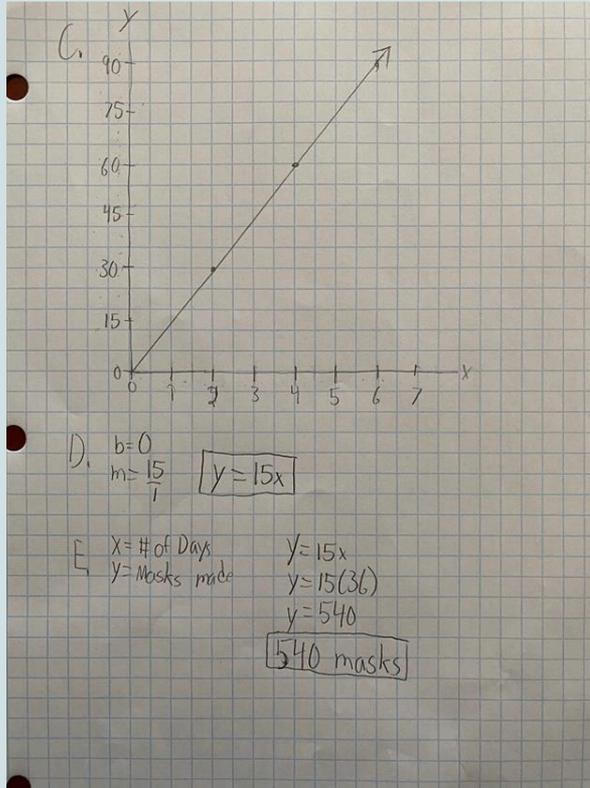
Answer:
You can cut 78, 9x8 rectangles. On one side of the big fabric is 59in. The other side is 108in. You can fit 6 - 9in sides on the side that measure 59in. You can fit 13 - 8in. sides on the other side. Multiply 13 by 6 and you get 78.

2.a. $\triangle y / \triangle x = 30/2 = 15/1$ Rate of change: m=15

2.b. The rate is constant

Assignment 3: Face mask production

2.d. Equation: y=15x

2.e. How many masks can be made in 36 days

y=number of masks   x=number of days

y=15x
y=15(36)
y=540
You can make 540 masks.

Assignment 4: Data Graphs

1. What can you conclude about the way the bars are drawn?
You can conclude that bars help to show how the numbers are increasing and how they are decreasing. If the bars get bigger as time passes, that means the number of cases are increasing. But if the bars get smaller, that means the number of cases are decreasing. You can conclude that more people took more precautions between Apri and May because that's when bars begin to decrease.

2. Go to "Newly Hospitalized" compare the weeks at the end of March to the weeks at the beginning of May. What do you notice?
I noticed that the bars began to increases but then began to decrease at a slow pace. This means that at first, many people need to be hospitalized, but then as time passed, less people were hospitalized due to lower cases.
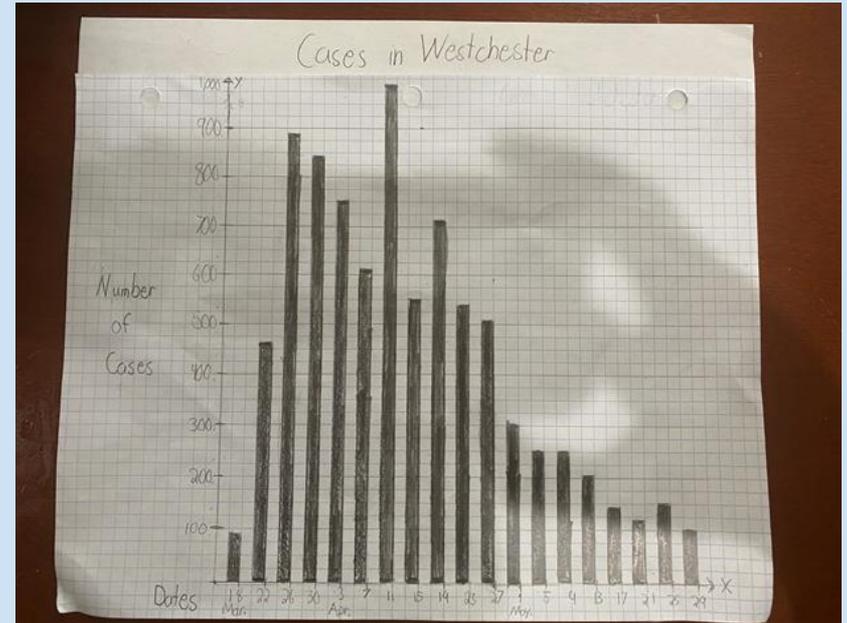
Since the beginning of May, there has been a significant amount of less cases.

Assignment 4: Data Graphs

Cases in Yonkers
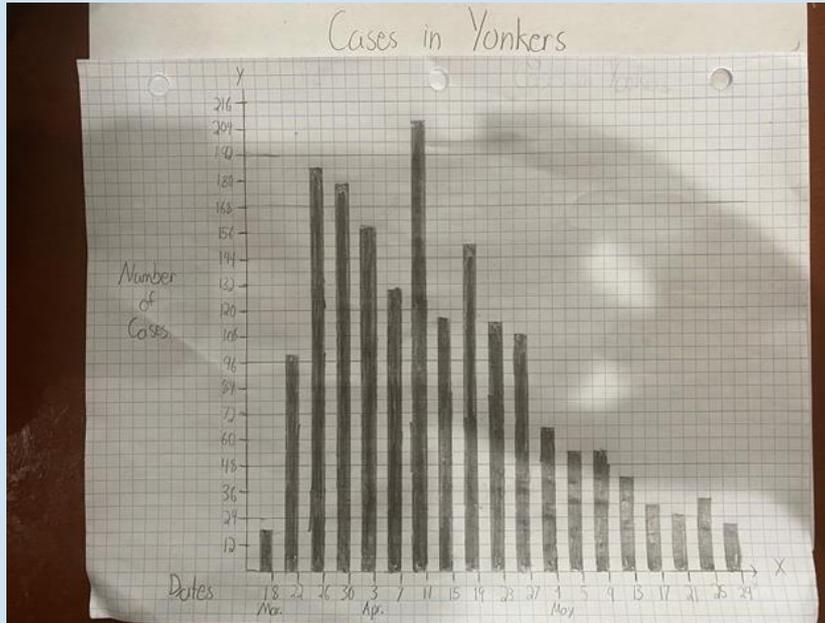
Cases in Westchester

Assignment 4: Data Graphs

3. On both graphs, they increase at the same time and decrease at the same time. At one point, cases were constant for the same dates on both graphs. The numbers where different but the increases and decreases were very similar.

Based on the graphs, I was able to conclude that all of the precautions that we took really helped with lowering the cases. We had to close schools, restaurants, shops, and other things. We had to separate ourselves from others and the ones we care about but it's really helping. At the beginning there were many cases. But then we had decided to take precautions and the number of cases began to decrease. On March 14th, we had over 11,000 cases in New York. But on May 31, we only had 941. That's a very big decrease and it's mainly because of all of the precautions we are taking. The curve is being flattened. When I say that I mean that instead of the graph curving upwards, its starting to curve downwards but the curve also begins to become flattened out into a straight line.

Flatten the Curve

We will be able to get through these times. We just have to take precautions. If we take precautions now, we'll be able to get back to our lives. Always have a positive attitude to help you. We will get through this. Stay safe!