

Systems of Equations Portfolio

Revisiting your goals:

1. Look at your goals, if you think back on the past few weeks, what would be your honest assessment of how you are making progress towards them? Give specific examples of things you have done in class.
 - a. Honestly, for a while I was going backwards. My table was always talking and cracking jokes, and none of us were really motivated to work. We got most of our problems done last minute, and it always looked messy (Ex. Cookies Graph). After we all sort of split up with the feeding frenzy of Shark Tank (haha) things got a lot better. I still don't feel great about my progress with helping people in my group, but I've been taking initiative to ask questions and converse (on topic) to my tablemates more often. I think I'm starting to get back on track, but I also want to make sure that I can focus in EVERY group I am put in. It's not okay to slack off just because your group is distracting, I have to be more responsible for my focus as well as making a positive influence on the focus of my peers.

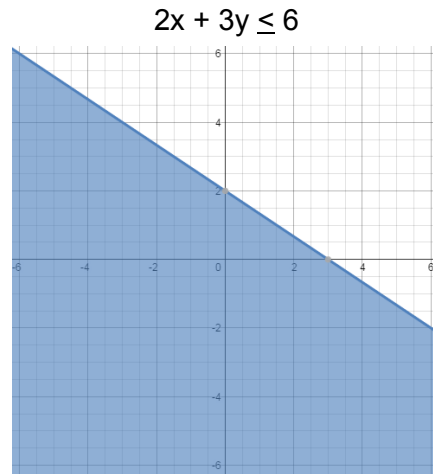
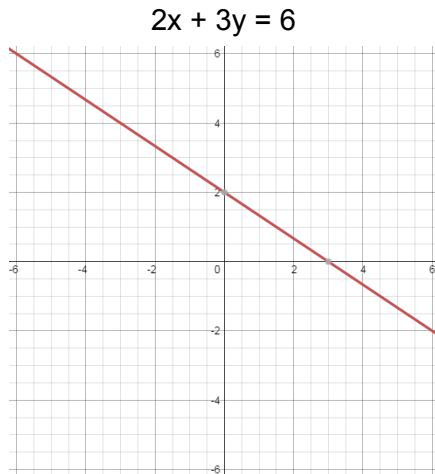
2. Looking at your test, why do you think you are at the level that you are in understanding this unit? How did your goals have an effect on this?
 - a. I think I understand everything to a good extent. I got one question wrong, but I sort of knew I was getting it wrong when I wrote the answer. I had been staring at that paper for so long that I just needed to finish. I think my main problem is just lack of independent practice. I don't really know what I don't understand because I haven't had a chance to not understand it. My goals were very group oriented, so that didn't help. I think I'm just very used to not having to try to understand because I usually just get it and explain it. That sounds bad and conceited but I promise it's just the truth. The ten points problems were really good though, and I challenged myself with a few 3 point problems. I think a lot clearer at home with no distractions, so I just thought out the problems and came up with a way to solve them. I double checked them and I think my method is pretty good, so I'm slowly getting better with this stuff.

3. What action steps will you take for this next round of observations to address goals you are still developing?
 - a. I think now that I've reflected I can just focus more on what I wanted to do. Coming up with goals in a few minutes over a month ago didn't feel significant enough to pay attention to. Having to write all this has really made me burn it into my brain. I'm just going to stop pretending that procrastination and distractions are okay and get to work. I think my goals are a little less group

oriented now, so I'm just going to strive for my own understanding until I can get to the point of helping other people.

Unit Summary:

1. Below are the graphs for the equation and inequality



Describe why the inequality has shading while the equation does not. What exactly does this shaded region represent?

You have to really focus on the symbols with these problems. Just like how you can read the words I have typed right here, you can learn to read equations too. They are just representations of what the equation/inequality is trying to tell you. It takes practice and understanding to be able to graph things quickly, but eventually you can read novels of math and it will all make sense. Now that I'm done with my pep talk, let's give some definitions.

Competition: Who is the greatest? Symbols and Graphs will tell you!

= (pronounced: equal) This symbol here is telling you that the information on both sides of it means the same thing. Because of this, there will not be a shaded region of the graph, you are only focusing on the numbers that will specifically give you equality. Nobody is the greatest, we are all equal!

> or < (pronounced: greater/lesser than) These two symbols tell you that one side of the information is greater or lesser than the other ($1 < 2$ or $2 > 1$) This will be represented with a dotted line and a shaded region. To be the greatest, you have to get more than the other player! If you only have the equation, remember that the alligator only wants the big fish, so the mouth is always toward the bigger number. If you are looking at the graph, it's a little different. Depending on who writes the graph, you will either see who won or who lost, you can tell by looking to see if the shaded region is above or below the dotted line.

\geq or \leq (pronounced greater/lesser than or equal to) This symbol is extra special! As long as you are tied or are greater than, you won! The same rules apply as the last definition, but this time the graph will show a solid line (just like the one for equal) rather than a dotted line.

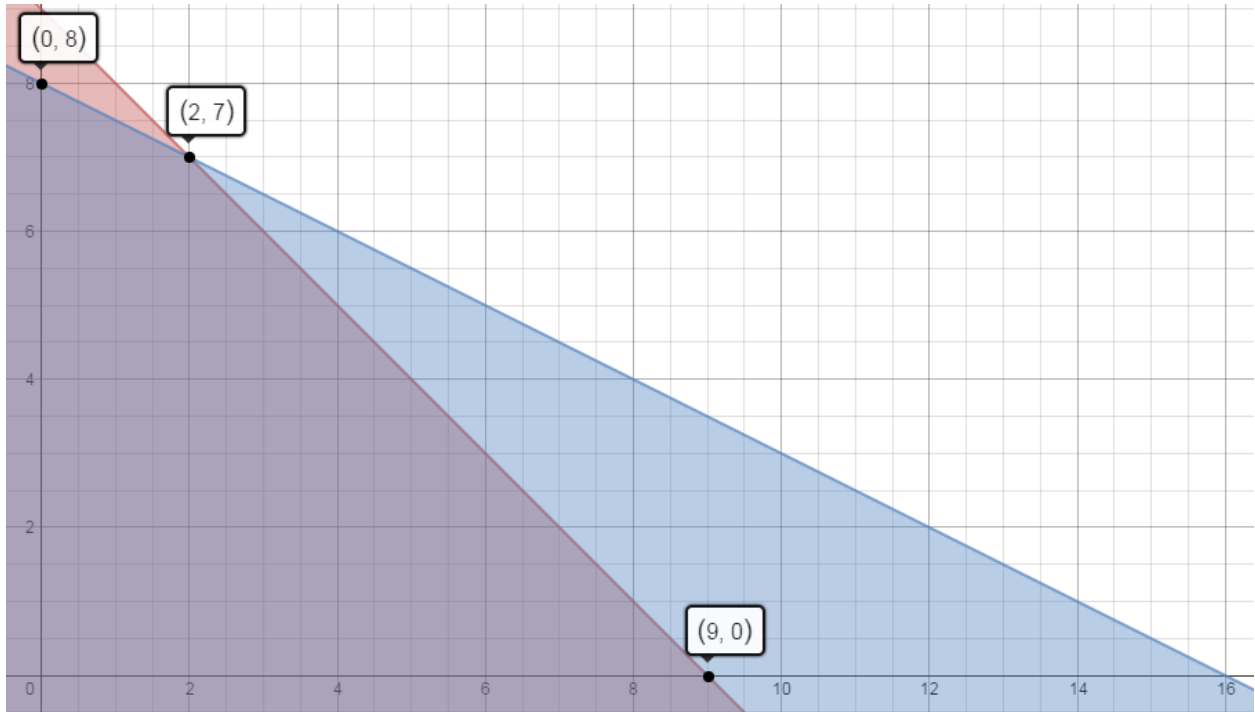
I hope you get it!

(Now you can explain it to second graders too Iza! How special!)

2. (Use graph below) A student says to find the maximum you only need to check the profits for the three "critical points" (0,8), (2,7) and (9,0). Why are these the only points that need to be tested?
 - a. First of all, you want to use as much of the materials as you can while making the most money right? So why check any other point inside of the feasible region if it will leave you with extra time/materials/space or whatever restrictions you have? Does your theoretical baker need a theoretical early day off to watch his favorite theoretical show? No, because he was given a set amount of hours to work, and you are paying him theoretical money so you'd better theoretically fire him if he is wasting time. Time is money!!! Second of all, if you were to graph the profit lines, you would notice that certain places on the graph make more or less money than others. If you are using the resources, you should probably use all of them so you can sell them and make the most money. So you want to find the points where you are using everything to it's best ability, and the critical points happen to be those places! Now, just find the place that falls on the highest profit line, or calculate the profit for each critical point. TADA!!!! ✓Money made.

Red Line: $x + y \leq 9$

Blue Line: $2x + 4y \leq 32$



Challenge Option: What would the profit function have to look like to make:

- i. $(0,8)$ the maximum?
- ii. $(2,7)$ the maximum?
- iii. $(9,0)$ the maximum?

Resources:

[How to graph linear inequalities \(Khan Academy\)](#)

[Graphing Linear Equations \(Khan Academy\)](#)

[Linear Programming \(Khan Academy\)](#)