**Welcome!** First make a copy of this Google Doc, naming it LP+ the names of all members. If your group was Wu, Chris, and Amy, you might name it LP-WuChrisAmy

Set up **Sharing -Get Link** so that anyone can View

Please provide the First Name, Last Name, and SFSU-email of each of your group members

First Name Last Name Email

1.

2.

3.

Go to **Google Draw**: <https://docs.google.com/drawings/d/16p2a9razX_lpZatfb_7Vohweynf7DfSWQuq8vg5Pu7c/edit?usp=sharing>

Go to **FILE>Make a copy** Name your drawing the same way as you did this document (LP+ the first names of your group)

Set up **Sharing -Get Link** so that anyone can View

Now create your drawing.

1. Label the X and Y axes with your decision variables. Pick names that make sense to you.
2. Plot (and label) the constraints (be sure to give them names that make sense for your problem, not just “constraint 1” or “x+y = 1 on the graph and indicate what the feasible region is by putting “Feasible Region” somewhere inside it. Also fill out the following yellow highlighted fields:
   1. How many constraints in total does this problem have?\_\_\_\_\_\_\_\_
   2. Are any constraints redundant (Circle 1) – **yes** or **no**     If yes, which one(s)?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Add an objective function to the graph with a value of z that isn’t too painful to work with. Don’t forget to include the z= \_\_\_ label
4. Determine the optimal solution, and fill in the following

Decision variable 1 (on the horizontal axis) is called  \_\_\_\_\_\_\_\_\_\_\_\_\_\_  and is  \_\_\_\_\_\_\_\_\_\_\_ at the optimum

Decision variable 2 (on the vertical axis)  is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_   and is  \_\_\_\_\_\_\_\_\_\_ at the optimum

The optimal value of z is $\_\_\_\_\_\_\_\_\_\_ At the optimum, which constraints are binding? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Once you are done, please email the instructor with all your group members cc:ed, providing links to your two documents, and please make sure that sharing is set up so you have granted viewing privileges to anyone with the link. (If you prefer to use a different drawing package than google draw that’s okay- you can always just email me a readable file (JPEG or PDF format ideally)  **That’s it for this week’s lab!** Next week’s lab will build on what we did here, but you can switch groups if you want.

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**PROBLEM**: Bob is making and selling two different types of burgers, Cheeseburgers(CB) and Double-Bacon-Burgers(DBB) at a local fundraising lunch, and he has a finite amount of donated supplies. The table below shows his supplies and ingredients needed for each burger. He’s also promised to make at least 1 Cheeseburger. He’d like to make the most revenues possible, and Cheeseburgers sell for $3 each, while Double-Bacon-Burgers are more expensive, at $5/each.

CB DBB (free) Supplies Available

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Beef Patties | 1 | 1 |  | 10 | patties |
| Cheese Slices | 1 | 0 |  | 10 | slices |
| Bacon Slices | 0 | 2 |  | 8 | slices |
| Buns | 1 | 1 |  | 12 | buns |