Information on writing a lab report:
Files have been uploaded to Canvas in the files tab. In the lab folder, you will find two files that will help you in your process: a presentation on how to write a good lab report and the grading rubric for the lab report rough draft.

Your lab reports will have sections similar to your lab notebooks, but should be structured differently. Here are the sections you should have:

Title Page: Title, name, date, lab section

Abstract: This is a short summary of the entire paper. It is usually about 300 words, but never more than a page. If you need an example of an abstract, check out the abstracts from the paper you presented for your paper presentation. Note: This is usually easiest to write last.

Introduction: Here is where all relevant background should be for your paper. It's best to start broad, and get more specific. Use previously published literature to support the background information you explain. This background information should lead to the rationale for your experiment. An introduction usually ends with your hypotheses.

Methods: A methods section is where the methods for your experiment are written in a way they can be reproduced. If you have multiple experiments, subheadings are useful for organization. Materials and methods should NOT BE LISTED. Methods should be written out in prose with materials stated where they are used. Be sure to state any treatments, independent, or dependent variables in this section. When methods are extensive, it is important to be concise in your writing.

Results: Again, this is another section that should be reported in prose. Do not list the results, and do not expect any figures to stand on their own. Subheadings can also be useful in this section for reporting results of individual experiments. Results sections should only state the results; state any trends or observations. DO NOT explain why these results occur in this section. Figures are helpful, but only when they are relevant and labelled properly. An example of an unnecessary figure would be the pictures taken of the nanodrop screen from our plasmid isolation lab. It is much more efficient to report the concentration of plasmid, and the machine does not add anything to the results. Helpful figures include those that show bacterial transformation or gel bands. Be sure to label everything in figures you add. Figures should also have captions which go below the figure and describe what the figure shows. If you have any tables, table captions go above the table. Figures and tables should be numbered, but separately (ie. Fig 1, Fig.2, Table 1 not Fig 1 Table 2). For more information on presenting data, see the data presentation file in Canvas. Figures and tables should be referred to within the text.

Discussion: This is where you will summarize the important findings of your research. The results sections is what happened, the discussion section is why it happened. What is the significance of the results? How do they compare with the results of other studies. Do you accept or reject your hypotheses? Were your results expected or unexpected? If they were unexpected, why? Any point brought up in your introduction should be discussed in your discussion. Note: Results never prove, only support or refute hypotheses.

References: You should have at least 10 primary source references in your paper. Use them to support what you say in your introduction and discussion. Your sources should be in APA style format. In-text citations should be in the form of (Author, year). More information on APA formatting can be found online and within links in the "How to write a good research paper" presentation on canvas.

Other Notes on your lab reports:
If the idea of starting to write seems daunting, start with the easy stuff, your methods. Once you start, it's easier to keep going. Also, remember that all your biotechnology labs are connected. This won't be a series of small lab reports, but a larger question answered by a series of experiments. All of the information in your introduction will be relevant to all experiments because all relate to gene expression, transcription, or translation.

Paper Format: Times New Roman, 12 pt font, 1 inch margins. Double or single spaced is fine. There is no page limit or minimum; take as long or as short as you need to get the point across. If you are still not quite sure what should go into a section of a paper, take a look at the plethora of published literature available at your fingertips. If you are not a native English speaker and are worried about losing points for grammar and spelling errors, don't worry. I will also check these things in your rough draft.