**Your experience:**

 You are in the first days of your new internship. They have provided the following data set to you and asked if you can look for possible improvement opportunities. Assume 22 working days/month and 7.5 working hours/day.

*Variable explanations:*

1. Number of defects per day – operators are expected to quickly review each product before sending it down the line. All defects must be recorded in a log book.
2. Experience rating of operator – all operators have an experience rating assigned to them based on the work they are doing. The rating is on a scale from 1 to 5, where 1 is inexperienced and 5 is expert.
3. Production time (min/unit) – this is an average time calculated for each individual operator for each workstation.
4. Cost of operator ($/hour) – operators are paid on an hourly basis at the rate indicated in the Excel data sheet.
5. Number of accepted items per day – items are tracked throughout the process. This is an average of the number of accepted items for a specified operator working a specified workstation on any given day.

**Instructions:** Using the above information,

1. Identify which variables they’ve provided are input, output, or outcome variables. Explain how you determined your answers.
2. Identify which levels of measurement have been used when collecting the data, and which variable corresponds to which level of measurement. Explain how you determined your answers.
3. Conduct a Pareto Analysis with the number of defects. What conclusion(s) can you draw from this analysis?
4. Are there any other visual indicators that would be useful in identifying possible improvement opportunities for the company? Explain. If yes, please include a complete version of that visual indicator.
5. Determine the product unit cost. Be sure to clearly show all of the individual costs included in the determination of the product unit cost. Assumptions listed above.
	1. Direct material costs = $12,000/month
	2. Rent = $8,000/month
	3. Utilities = $2,000/month

Compile your answers into a concise memorandum and include any additional details and all of your work as attachments. Your memo should highlight the key findings from your report which the plant manager of your internship would be interested in hearing about. The memo should be appropriately formatted and appropriately address the problem(s) and solution(s). Remember a memo should be 1 page.

You are more than welcome to solve mathematical equations on paper by hand.  Please scan or attach a picture of your work to your memo.  ***Incomplete work will not be graded.***

If you have any questions, please reach out to me via email () or during class time.