B: Requirements:

1- Create a consumer model that shows how economists explains the consumer choice between two products (X & Y) that maximize the consumer utility. Do not use numbers. Just graphs and **detailed** explanation for the dynamics of the model. Make sure to explain the convexity of the indifference curve and what does it mean.

2- Show why the equilibrium point (tangency) shows the best bundle of X & Y and that any other point will not reflect a bundle that maximize consumers utility.

3- Derive the demand function from the consumer theory. Do not use numbers. Just graphs and **detailed** explanation. Could you relate the elasticity of the demand function to the consumer theory?

4- Show on the graphs and explain how the change in consumers income may change the equilibrium bundle (utility maximizing bundle) and shifts the demand function.

5- Create a firm model that shows how economists explains the firm level of production that maximize its profit. Do not use numbers. Just graphs and **detailed** explanation. Make sure to explain the concavity of the production function and what does it mean.

6- Show why the equilibrium point shows the maximum possible profit & and that any other point will not reflect a bundle that maximize the firm profit.

7- Derive the supply function from the firm theory. Do not use numbers. Just graphs and **detailed** explanation.

8- Create a market (only graph, no numbers needed) that shows intersection between the supply and demand functions (that you have derived earlier). **One graph**.

Then, show how the shifts in demand and supply (right and left) may affect the equilibrium price. To show this, create **two graphs** (one graph that shows increase & decrease in demand and the other graph shows increase and decrease in supply). Then, briefly explain in one paragraph the changes in the equilibrium price and quantity that results from the shifts in supply and demand.

9- Why do we quantify in science i.e., why do we have to use math in order to do any scientific analysis?

10- What do you know about the maximization and minimization of convex and concave functions? Graph and explain.

Good luck