This problem set is based on Varian 2014

Problem 9: Monopoly Behaviour

Let us retake the taquería problem from last problem set. Let us first focus on the short run and suppose that the production function is

$$y = h(l) = cl^{1-\alpha}$$

- If $\alpha = 0$, what type of technology is this? What is the taquería's profit maximization problem? What is the minimum taco price for which the taquería is willing to not shutdown? Discuss why.
- Suppose we are now talking about the long run. What other condition can we impose to give the problem more "structure"?
- Now suppose $\alpha = \frac{1}{2}$. What type of technology is this? Solve the taquería's optimization problem. What is the condition the optimal level of output solves?
- Now suppose that this is the only taquería in town. The town's taco demand is given by the inverse demand function $Q_d(p) = a - bp$. How is the taquería's optimization problem affected? Is the equilibrium affected? If so, how? Show your answer graphically.

References

Varian, H. R. (2014). *Intermediate Microeconomics: A Modern Approach*. 9th ed. W. W. Norton & Company.