1. (6) The profit maximizing quantity decision for a firm is to set marginal revenue equal to marginal cost. See hand written work below for algebraic manipulation into expressions with price, marginal cost, and elasticity of demand. This makes sense for a perfectly competitive market because we know that the elasticity of demand is for a firm is negative infinity. Given this, the price will be equal to the firm’s marginal cost (a result from perfect competition).

\[ MR = \frac{\Delta R}{\Delta Q} = \frac{\Delta (PQ)}{\Delta Q} \]

\[ = P + Q \left( \frac{\Delta P}{\Delta Q} \right) \]

\[ = P + P \left( \frac{\Delta}{\Delta P} \right) \left( \frac{\Delta P}{\Delta Q} \right) \]

\[ MR = P + P \left( \frac{1}{Ed} \right) \quad Se_{Ed} \quad MR = MC \]

\[ P + P \left( \frac{1}{Ed} \right) = MC \]

\[ \frac{P - MC}{P} = -\frac{1}{Ed} \]

In P.C., \( Ed = -\infty \)

\[ \frac{P - MC}{P} = -\frac{1}{\infty} \]

\[ \frac{P - MC}{P} = 0 \quad \Rightarrow \quad P = MC \]
2. (6) Regulating a natural monopolist differs because the price where marginal cost equals marginal benefit (demand) corresponds to an equilibrium where the firm would earn negative economic profits. The firm in this case would refuse to stay in business (or produce nothing). Thus, the best that a regulator can do is set a price where the average total cost intersects demand. This is known as average cost pricing. It is the lowest price that the firm is willing to charge. There are many problems or strange incentives caused by this regulation. Some of them stem from the elimination of the profit incentive. Firms no longer have an incentive to lower costs (because profits remain at zero), firms have an incentive to lie about costs (because profits can be greater than zero if successfully misrepresented), and firms do not have an incentive to improve the quality of the good (because profits remain at zero). See graph below for illustration of a natural monopolist.

\[ \text{Average Cost Pricing Outcome} \]

\[ (P_2, Q_L) \]

\[ P_{\text{m, q m}} - \text{outcome if not regulated} \]

\[ P_{\text{1, q 1}} - \text{outcome of } \frac{MC}{MB} \text{ regulation} \]

\[ (\text{profits} < 0) \]
4. (6) Section One: Restricts every formal action to reduce quantity and raise price in a market. In reducing quantity and increasing price, firms are able to charge a price above marginal costs (which is our definition of market power). Section Two: Restricts monopolizing or attempting to monopolize a market. One of the factors that affects pricing power is the number of firms. This attempts to limit activities that lead to lower number of firms. Celler-Kefauver Amendment: Gave the ability to challenge vertical mergers in addition to horizontal mergers. Reduced the ability of firms to create pricing power through market concentration in related industries.

5. (4) The industry trend in this period of history was a decrease in the number of firms in a market and an increase in firm size. Consumers grew concerned over the pricing power enjoyed by the larger firms. In addition, many “Western” farmers who conducted business with firms in other industries in order to bring their produce to the market complained about the power that these firms were amassing. Some individual states attempted to pass laws against these large firms, but the firms either threatened to move or actually moved to another state with more lenient laws. Thus, there was a need for federal governing.