Conference 1 Micro Theory 250D2

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material is not 100% my ideas
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Questions

1. The monopolist faces a demand curve given by $D(p) = 100 - 2p$. Its cost function is $c(y) = 2y$. What is its optimal level of output and price?
2. The monopolist faces a demand curve given by $D(p) = 10p^{-3}$. Its cost function is $c(y) = 2y$. What is its optimal level of output and price?

Calculating Optimal Price Discrimination

1. monopolist faces two markets with demand curves $D_1(p_1) = 100 - p_1$ and $D_2(p_2) = 100 - 2p_2$
2. Assume constant $MC = 20$
3. If it can price discriminate, what price should it charge in each market in order to maximize profits? What if it can't price discriminate? Then what price should it charge?

Question 1 Skeleton

1. Solve for inverse demand curve
2. Obtain MR by taking derivative of TR w.r. to output
3. Set equal to MC (remember MR = MC)
4. Solve for output
5. Sub output into price

Question 2 Skeleton

Could use the same method, but that takes a lot of work. Here is a trick

1. $MC = p(1 + \frac{1}{\epsilon})$
2. The elasticity is $\epsilon = -3$
3. Sub into formula (remember MR = MC)
4. Solve for p
5. Plug into $D(p)$