

Price Discrimination Handout 1

Price discrimination is the selling of two varieties of a product to two different buyers at different net prices, where the net price is the price paid by the buyer adjusted for any cost of product differentiation. **Price discrimination** occurs when a firm charges different prices to different customers for reasons other than differences in production costs.

Requirements for price discrimination

There must be a downwards sloping demand curve for the firm's output

The firm must be able to identify consumers willing to pay more

The firm must be able to prevent low-price customers from reselling to high-price customers

A firm practices **first-degree or perfect** price discrimination if it is able to charge the maximum price each consumer is willing to pay for each unit sold. Specifically, perfect price discrimination involves the seller charging a different price for each unit of the good in such a way that the price charged for each unit is equal to the maximum willingness to pay for that unit.

Consider an elderly farmer named Grandpa Jones who owns all the 1924 John Deere "Spoker D" tractors in existence. He wants to sell them all. They have marginal value to him of 0. As it turns out he has 5 tractors. Suppose that there are 2 individuals interested in buying these tractors. They are identical and each have a demand schedule as follows.

Tractors	Price
First	\$16,000
Second	\$12,000
Third	\$8,000
Fourth	\$6,000
Fifth	\$4,000

Consider the case where pricing is uniform. Demand data is contained in the table on the next page. To sell all 5 tractors, Grandpa Jones must set a price of \$8,000. Doing so he will obtain total revenue of \$40,000. This is not Grandpa Jones's best strategy, however. If he sets a price of \$12,000, he will sell 4 tractors and have revenue of \$48,000. This is clearly larger than the \$40,000 obtained from selling 5 tractors at \$8,000 a piece.

An alternative is to price discriminate and charge different amounts for different tractors and consumers. If Grandpa is able to perfectly price discriminate, he can obtain revenue of \$64,000 (\$16,000 + \$16,000 + \$12,000 + \$12,000 + \$8,000)

There are a number of methods that can be used to try to obtain this maximal price discriminating revenue. For example he might offer to sell the tractors in bundles for \$28,000 per bundle where the purchase of two tractors gives individuals the right to bid on a third. This will give total revenue of \$56,000 from the two bundles. He might then auction off the remaining tractor. With competitive bidding he will obtain \$8,000 for this tractor.

Or he might offer a three unit tractor bundle for \$36,000 along with a two unit bundle for \$28,000 per bundle. One consumer will purchase the three unit bundle and the other will purchase the two unit bundle.

Price	(Demand)	Total Revenue
> \$16,000	0	0
\$16,000	1	16,000
\$16,000	2	32,000
\$12,000	3	36,000
\$12,000	4	48,000
\$8,000	5	40,000
\$8,000	6	48,000
\$6,000	7	42,000
\$6,000	8	48,000
\$4,000	9	36,000
\$4,000	10	40,000

Some other options

1. A five unit bundle for \$46,000. What are some problems here?
2. One tractor for \$16,000 or four for \$42,000. What is a problem here?
3. One tractor for \$16,000 or two for \$28,000. What is a problem here?
4. One tractor for \$16,000 or three for \$36,000. What is a problem here?