

Law of Demand

by Sophia Tutorial



WHAT'S COVERED

This tutorial will cover the law of demand, explaining how to interpret a demand schedule and why a demand curve is downward sloping.

Our discussion breaks down as follows:

1. What Is Demand?
2. Law of Demand
3. Ceteris Paribus

1. What Is Demand?

We use the law of demand every day. Think about the last time you bought something because it was on sale, or used a coupon or an ad to get a deal. Alternatively, perhaps you *did not* buy something, because its price was too high.

In all of these situations, you were using demand. This is because demand means that you want something and you can afford it, or the willingness to pay for it--which is why demand is sometimes called willingness to pay.

Here is an example of a demand schedule, featuring Granny Smith apples.

Price of Granny Smith Apples	Quantity of Granny Smith Apples Each Week
\$2.00	0
\$1.75	1
\$1.50	2
\$1.25	3
\$1.00	4

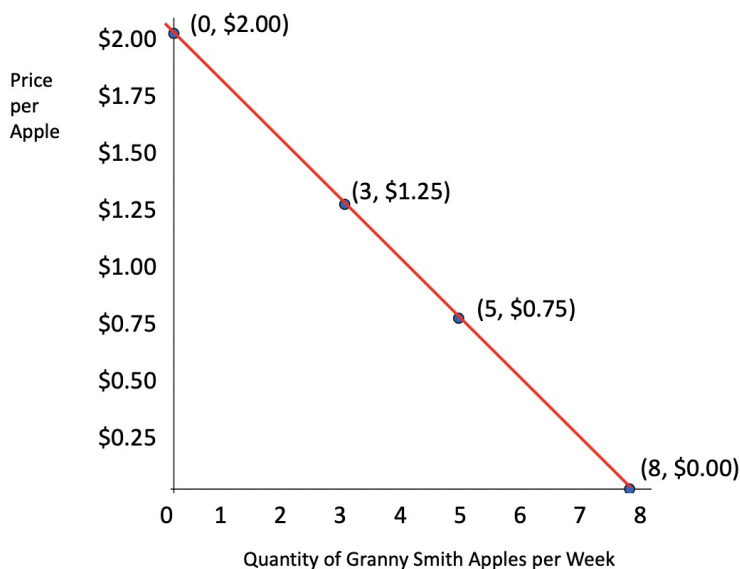
\$0.75	5
\$0.50	6
\$0.25	7
\$0.00	8

Notice that it details the price of the apple at each respective quantity as if you were surveyed to find out how many apples you would purchase each week at different prices.

For instance, if each apple was \$2, you would not purchase any apples. As the price goes down to \$1.50, you might buy one a week and treat yourself. If the price was only \$0.50 an apple, you would purchase five, and if they were \$0.25, you'd purchase six. Now, if the apples were free, you likely cannot eat more than an apple a day, so you would buy seven.

When we graph this relationship, we put the price on the y-axis and the quantity you are willing and able to purchase on the x-axis, and simply plot the points.

You can see that when we plot the points, we are presented with a downward sloping demand curve.



As the price of Granny Smith apples falls, you tend to buy a greater quantity, which is essentially the law of demand.

Notice that there is an inverse or negative relationship between the price and the quantity: as prices fall, the quantity rises. The reverse is also true; as the price rises, the quantity falls.

2. Law of Demand

The **law of demand** is defined as the inverse correlation between price and quantity with all other variables fixed.

So, why is demand downward sloping? Why is there an inverse relationship between price and quantity?

Well, it is actually because of two different reasons. As something gets more expensive:

- We cannot afford as much of it because of the effect on our income.
- We will find substitutes for the good or service, and therefore buy less of it.

Now, for some goods and services, people will respond a lot when the price changes.

➦ **EXAMPLE** Keeping with the apple example, when the price goes up for Granny Smith apples only, people will likely respond in a variety of ways, because there are so many different brands of apples. They can either buy a different brand of apple or simply purchase a different fruit because there are many substitutes for Granny Smith apples.

However, for some goods and services, people will not respond as much when the price changes.

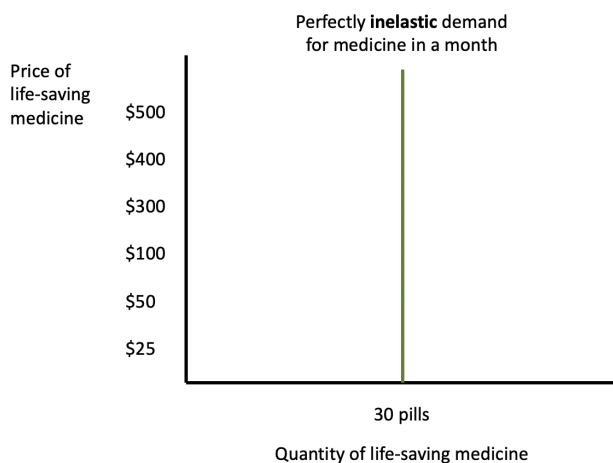
➦ **EXAMPLE** Generally speaking, as gasoline gets more expensive, most people still want to drive. However, at some point, people do start to alter their behaviors, as gasoline gets more expensive and impacts their income. This is the point at which we might see people begin to carpool more often, or go on fewer longer trips, or perhaps utilize public transportation. They might even consider relocating closer to work.

In this case, then, gasoline is more difficult to substitute than a brand of apple, so people do not respond as much.



THINK ABOUT IT

Do you think that there are exceptions to this rule? Is there a product that people will still buy the same amount of, even if the price goes up? Well, it is quite rare, but there are special cases, such as a life-saving medicine that someone needs regardless of price. This is known as perfectly inelastic demand, meaning the quantity purchased does not vary at all as the price changes.



Keep in mind, though, that these exceptions to the law of demand are very rare. For the most part, as price goes up, people buy less, while as price goes down, people tend to buy more.



TERM TO KNOW

Law of Demand

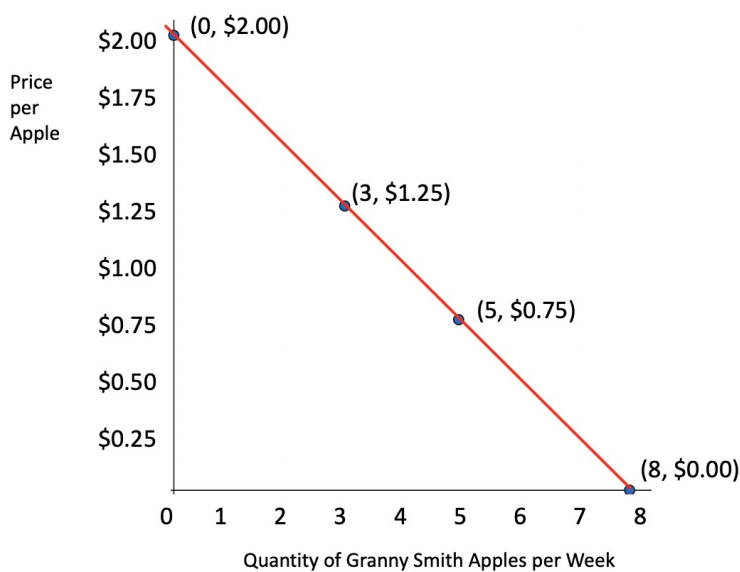
The inverse correlation between price and quantity with all other variables fixed

3. Ceteris Paribus

It is important to note, though, that this assumes the law of **ceteris paribus**, which is defined as holding all other variables constant. In our apple example, we have been saying that as the price of Granny Smith apples goes up, we expect that people will buy fewer Granny Smith apples.

However, ceteris paribus assumes that only the price of Granny Smith apples has changed. For instance, the price of Gala apples did not change, the price of oranges or bananas did not change, and your income did not change. This is why a change in price is seen as movement along the curve.

Referring back to our original demand schedule and demand graph, notice that as the price of Granny Smith apples drops, you buy more.



Because the price is on the y-axis and the quantity is on the x-axis, this is only involving a relationship between these two variables--price and quantity. Therefore, we can only move from one point to the next along the demand curve, as price changes.

It is very important to clarify this point when describing this relationship. This is not a change in demand itself. It is not accurate to state that as the price falls, demand goes up.

Rather, we would say that as the price falls, the quantity demanded increases. Therefore, we consider a price change to be a change in quantity demanded, not a change in demand itself.



BIG IDEA

Assuming ceteris paribus, a change in price causes a change in quantity demanded, not demand itself.



TERM TO KNOW

Ceteris Paribus

Holding all other variables constant



SUMMARY

Today we learned **what demand is**, and how the **law of demand** describes the relationship between price and quantity. We learned that the law of demand represents an inverse or negative correlation between price and quantity with all other variables fixed, or **ceteris paribus**. Although there are rare situations in which people do not respond at all as price goes up, typically there is an inverse relationship between those two variables. A change in price causes movement along the demand curve, which is known as a change in quantity demanded.

Source: Adapted from Sophia instructor Kate Eskra.



TERMS TO KNOW

Ceteris Paribus

Holding all other variables constant.

Law of Demand

The inverse correlation between price and quantity with all other variables fixed.