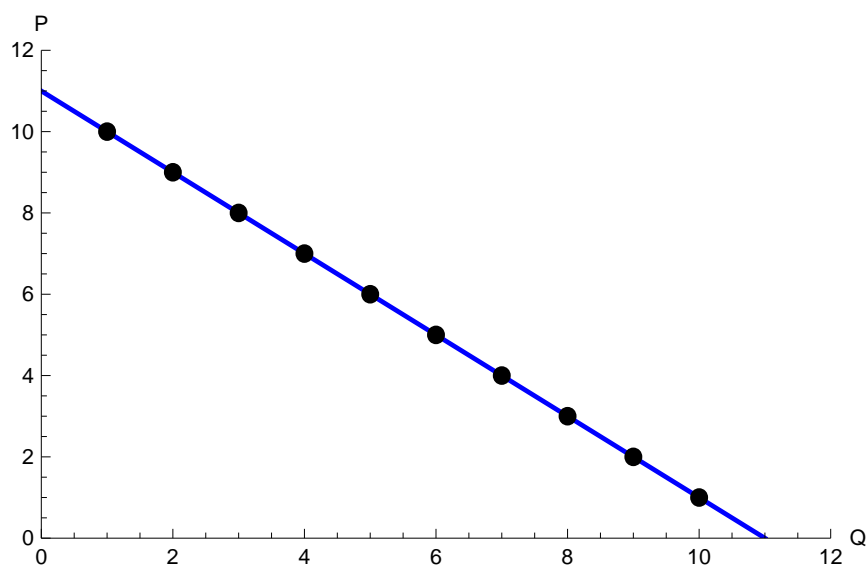

To answer your question, I will construct a simple example.

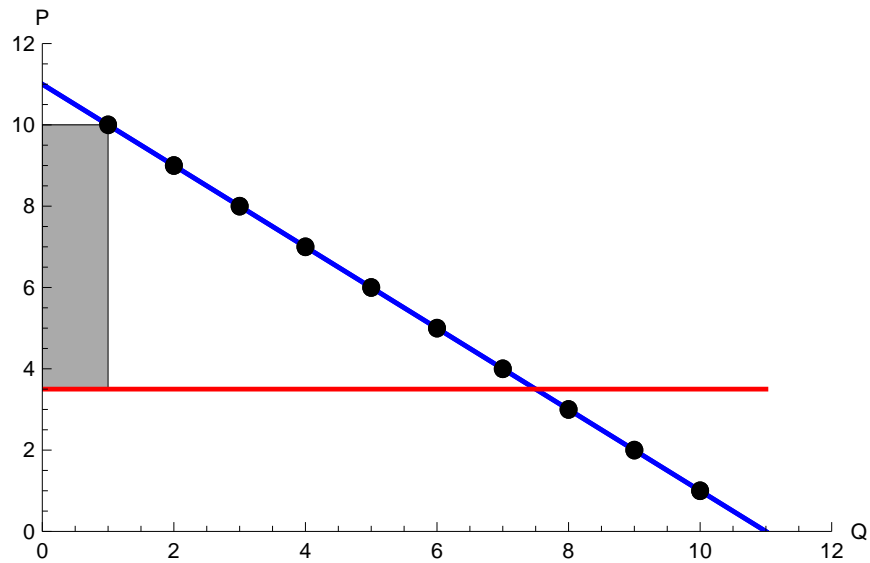
- Suppose we have ten potential buyers for a product. The ten buyers each have a different willingness-to-pay, or B . Buyer #1's B is equal to \$10, Buyer #2's B is equal to \$9, Buyer #3's B is equal to \$8, and so on down to Buyer #10's B of \$1.
- Now let's ask what the demand curve for this product looks like. A demand curve is simply a graph of the relationship between price and quantity. If the firm sets a price between \$10 and \$9, then only Buyer #1 will purchase, so the firm's quantity will be 1. If the firm sets a price between \$9 and \$8, then both Buyer #1 and Buyer #2 will purchase and the firm's quantity will be 2.
- We can continue this reasoning and see that the firm's demand curve will look like this:



- Now suppose the price is $P = \$3.50$, and let's think about the total consumer surplus. Consumer surplus for a given buyer is that buyer's B minus the price P that the buyer pays.
- So, the consumer surplus for Buyer #1 is

$$\begin{aligned} B - P &= 10 - 3.50 \\ &= 6.50 \end{aligned}$$

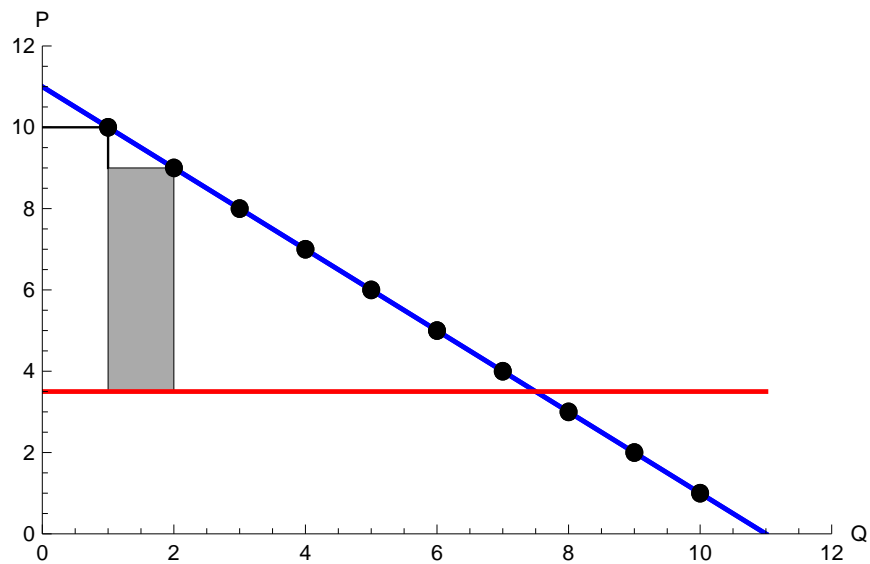
- Graphically, Buyer #1's consumer surplus is the shaded rectangle below. This buyer purchases one unit (the base of the rectangle) and gets \$6.50 in consumer surplus on that one unit.



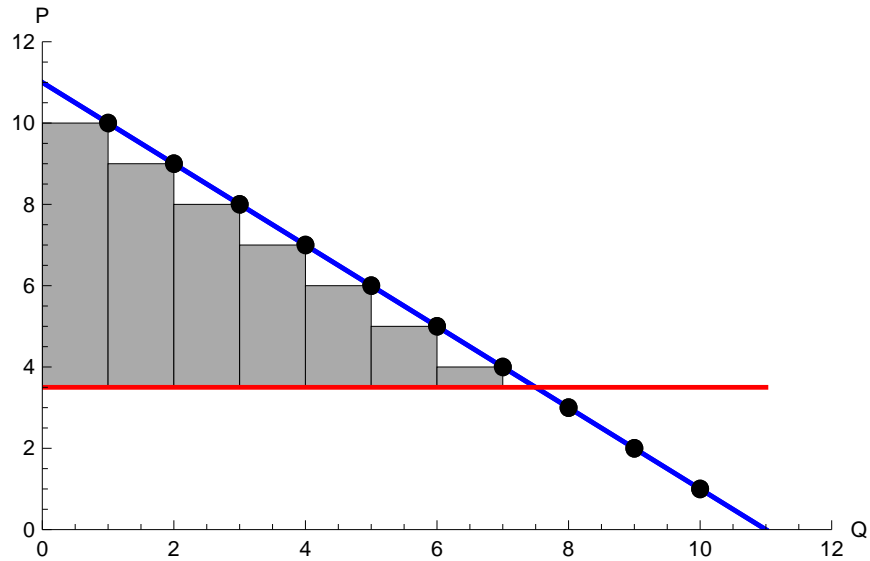
- Consumer surplus for Buyer #2 is

$$\begin{aligned}
 B - P &= 9 - 3.50 \\
 &= 5.50
 \end{aligned}$$

- Buyer #2's consumer surplus is the shaded rectangle below.



- If we add this up over all consumers, we see that *total* consumer surplus is approximated by the shaded area above the price and below the demand curve.



- The total amount of consumer surplus is \$24.50.
- And if we imagine a demand curve with many, many buyers, then total consumer surplus will be the shaded triangle shown below:

