Intro to Economic Analysis: Microeconomics

EC 201 - Day 3 Slides

Connor Wiegand

Department of Economics - University of Oregon

4 October 2021

Logistics

- Sign up for Cengage, intro homework due tonight at 11:59pm

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- Some news assignments posted, first one due Wednesday, October 13

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- Reading the book hopefully gave you insight into incentives and other economic thinking ideas that we will build throughout the term
- Now we will transition to talking about markets for good, starting with the consumer side
- While PPFs and (specifically) OC will be important frameworks to keep in mind, they are more or less not the bread and butter of introductory micro
    - That being said, OC will implicitly be present throughout the quarter

The Relationship Between Price and Quantity

- Activity: How many iced coffees would you get for...

Price	Quantity
\$0	

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Price	Quantity
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\$5	

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\$4	1
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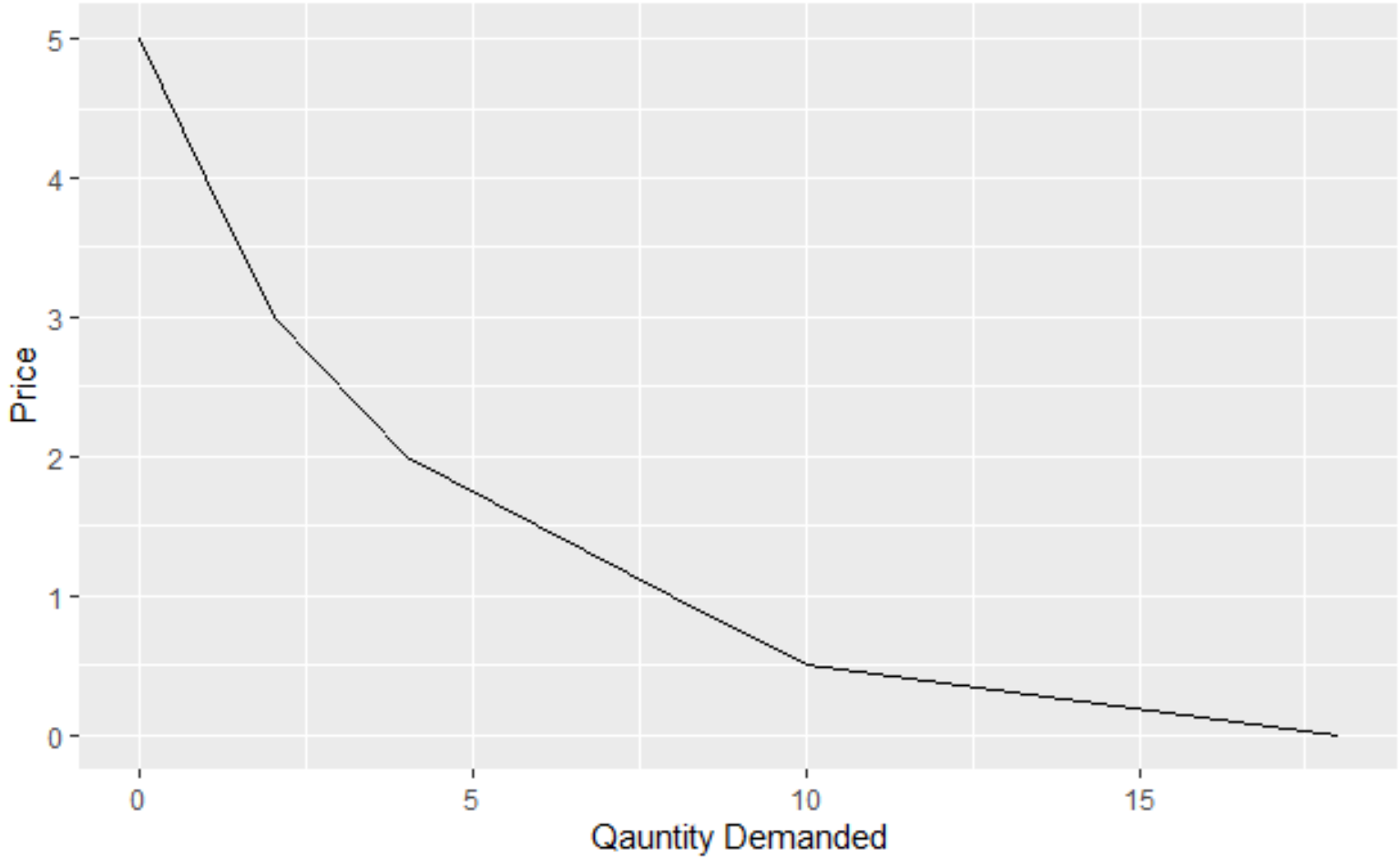
Individual Demand Curve

- This set of points can be used to establish my individual demand curve



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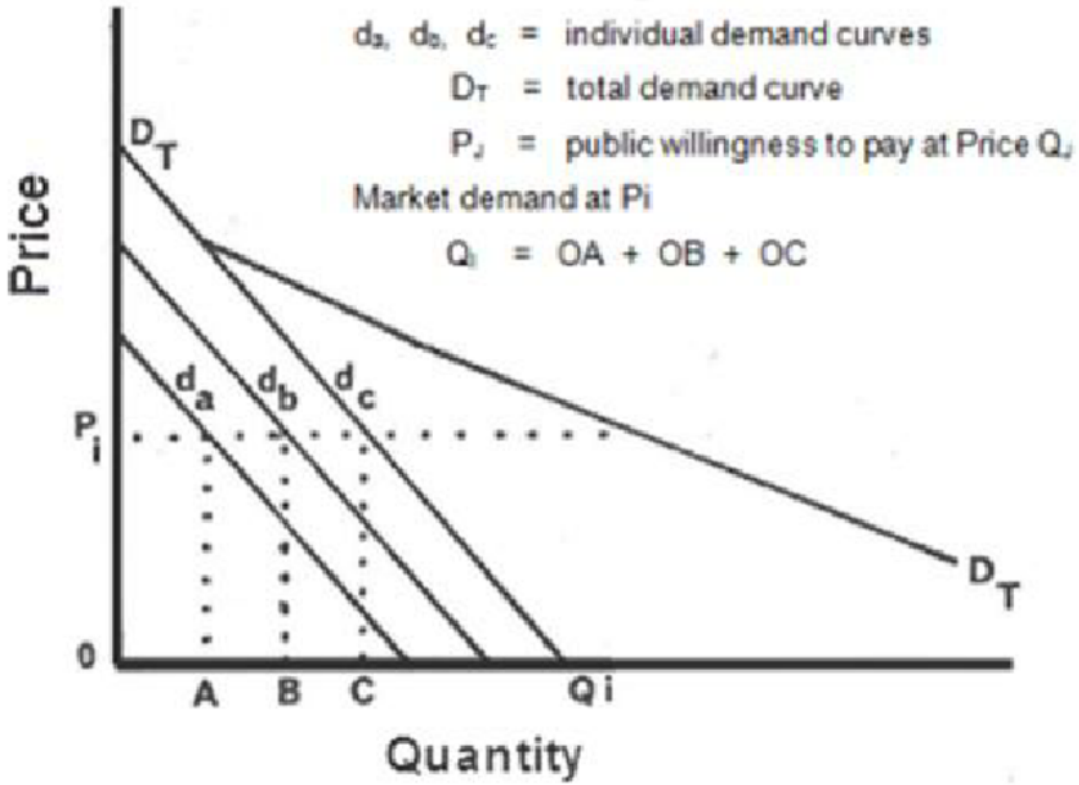
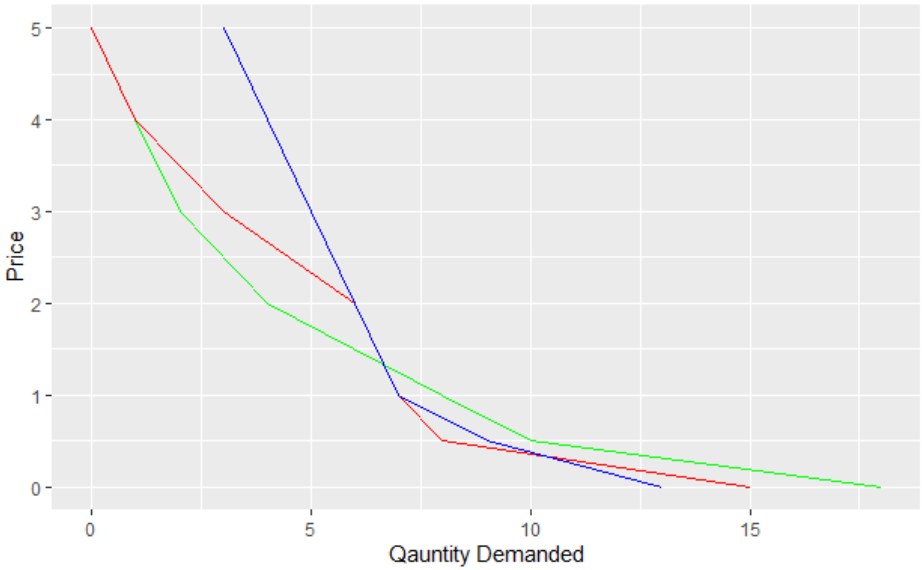
  - 

Market Demand Curve Example

- For example, if I am one member of the economy, and I have two of you as members of the economy, so that our three individual demand curves look like the this (left):



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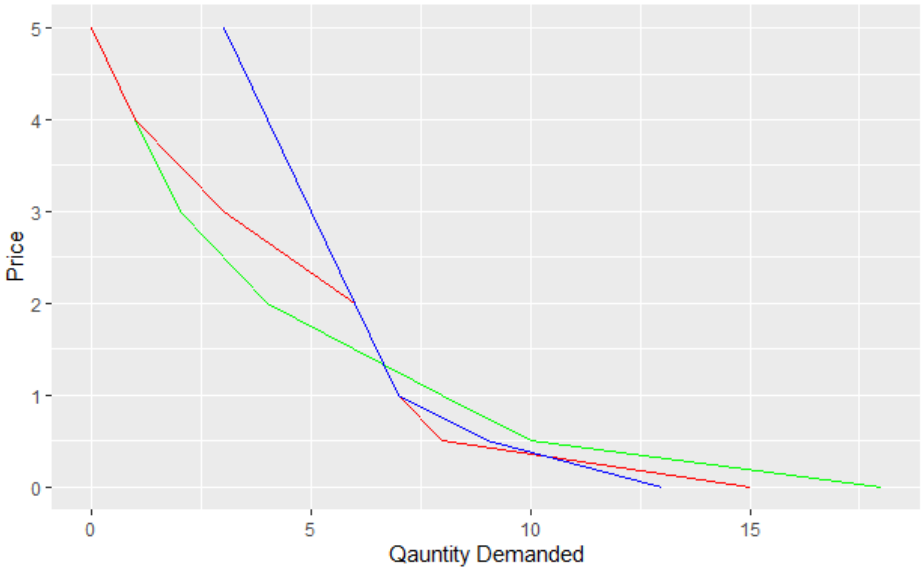

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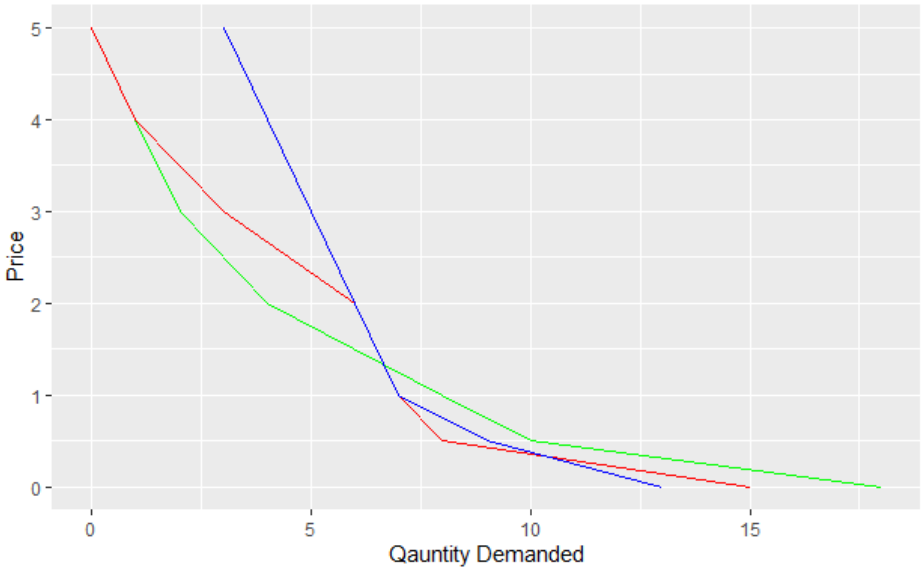

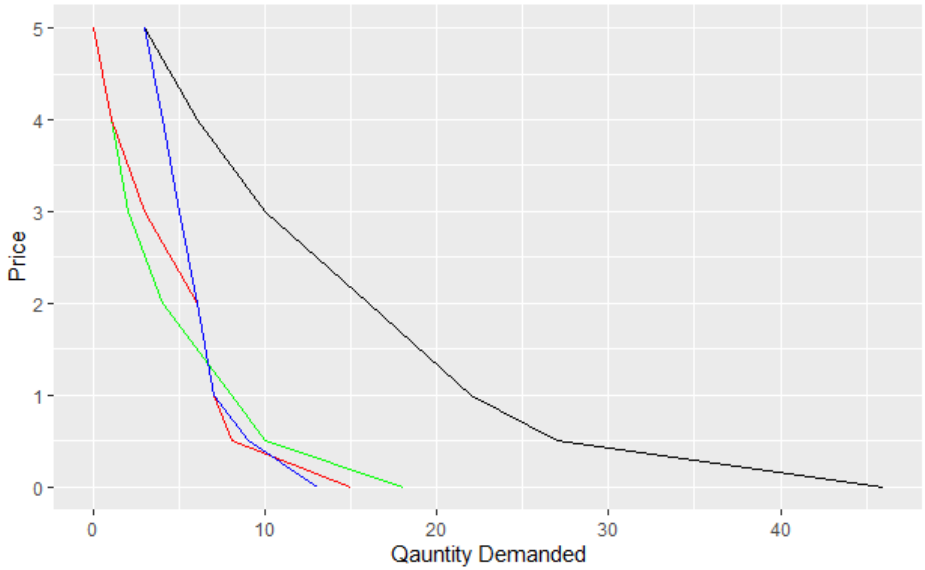

- Then our market demand will look like this (right)

Demand Curve Features

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Demand Curve Features

- What is the most obvious feature of the demand curve?
  - It's downward sloping
- This says that the relationship between price and quantity demanded is negative: as the price goes up, you (or the market) demand less of the good in question
- This is formally known as the **Law of Demand**: "Other things being equal, when the price of a good rises, the quantity demanded of the good falls, and when the price falls, the quantity demanded rises"

Quick Aside

- The previous definition started with the phrase "Other things being equal,"; you will also hear "all else equal," or the latin phrase of similar meaning, "ceteris paribus"[1]

[1] If you google the phrase and ask google to say it, it pronounces it with a hard "kae", like in "cater". However, if you google "ceteris paribus pronunciation, google uses a soft "seh". The former is regarded as correct while latter has been more common historically.

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- Doing theory (what we are doing), we just assert it

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- Economists will often not compare demand curves across these different tiers, but it is not out the question (for example, when studying a specific firm with few types of services, like Uber)

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- The biggest topic in this chapter relating to the demand curve will being shifting it, or moving along it

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- Expectations
  - If you anticipate the price of gas to increase tomorrow, you will buy more gas today

Relevant Terminology

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- A good is called **normal** if an increase in income leads to an increase in demanded for said good

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- Two goods are called **complements** an increase in the price of one good leads to an decrease in the demand of the other

Income:

- A good is called **normal** if an increase in income leads to an increase in demanded for said good
- A good is called **inferior** if an increase in income leads to a decrease in demand for said good

What Do These Demand Changes Look Like?

- When the demand curve rises, we say that the demand curve shifts...

[2] On a test or assignment, you should be very clear on whether or not you mean a curve shift or a movement along the curve

What Do These Demand Changes Look Like?

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  - outward

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What Do These Demand Changes Look Like?

- When the demand curve rises, we say that the demand curve shifts...
  - outward
  - rightward

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  - inward
  - leftward
  - downward
- We also may just say that demand rises or falls[2]

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What Do these Demand Changes look like? (cont.)

- An example of sloped demand curves shifting:

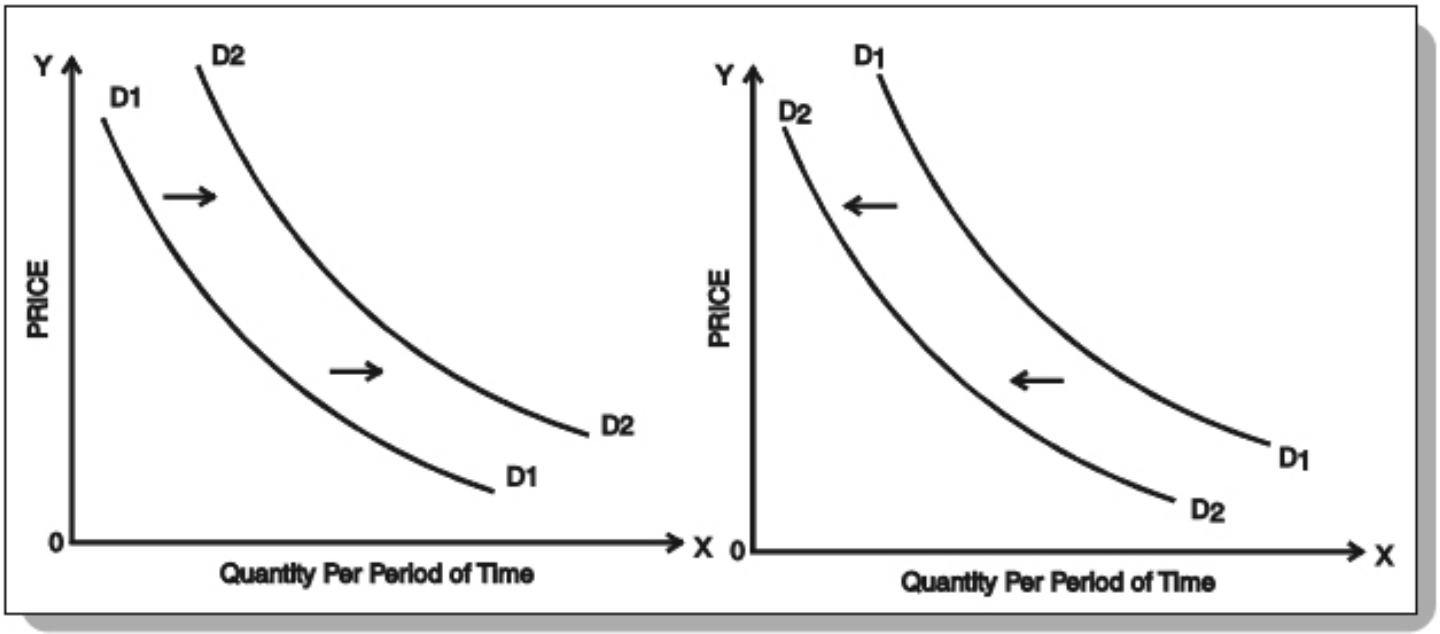


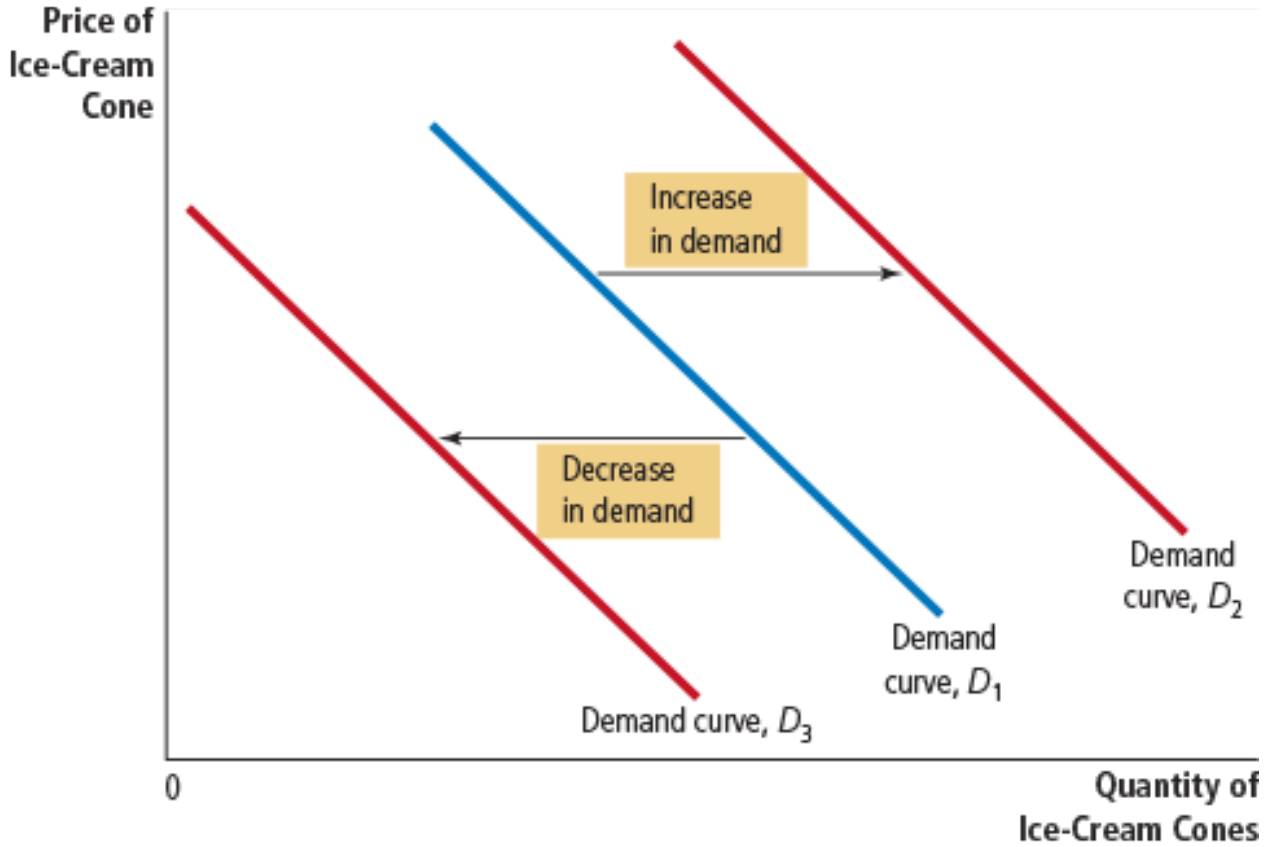
Fig. 3(a) : Rightward shift in the demand Curve

Fig. 3(b) : Leftward shift in the demand curve.

- Note that shape and relative slope are preserved (later we may see examples where the slope can change)

What Do these Demand Changes look like? (cont.)

- An example of linear demand curves shifting:



- Note the arrows and correct labelling

Changes in Price

- So our shifters of demand are
  - changes in income
  - changes in tastes and preferences
  - changes in # of market participants[3]
  - changes in expectations
  - changes in the price of related goods

[3] Cue everyone over the age of 35 saying "haha I bet you think this is a hashtag hahahahahaha"

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- What about changes in the price of the good itself?
- In fact, changes in the price of good x do not shift the demand for good x, as one might expect

[3] Cue everyone over the age of 35 saying "haha I bet you think this is a hashtag hahahahahaha"

Changes in Price

- So our shifters of demand are
  - changes in income
  - changes in tastes and preferences
  - changes in # of market participants[3]
  - changes in expectations
  - changes in the price of related goods
- What about changes in the price of the good itself?
- In fact, changes in the price of good x do not shift the demand for good x, as one might expect
- When the price of good x changes it simply causes a movement along the demand curve for x

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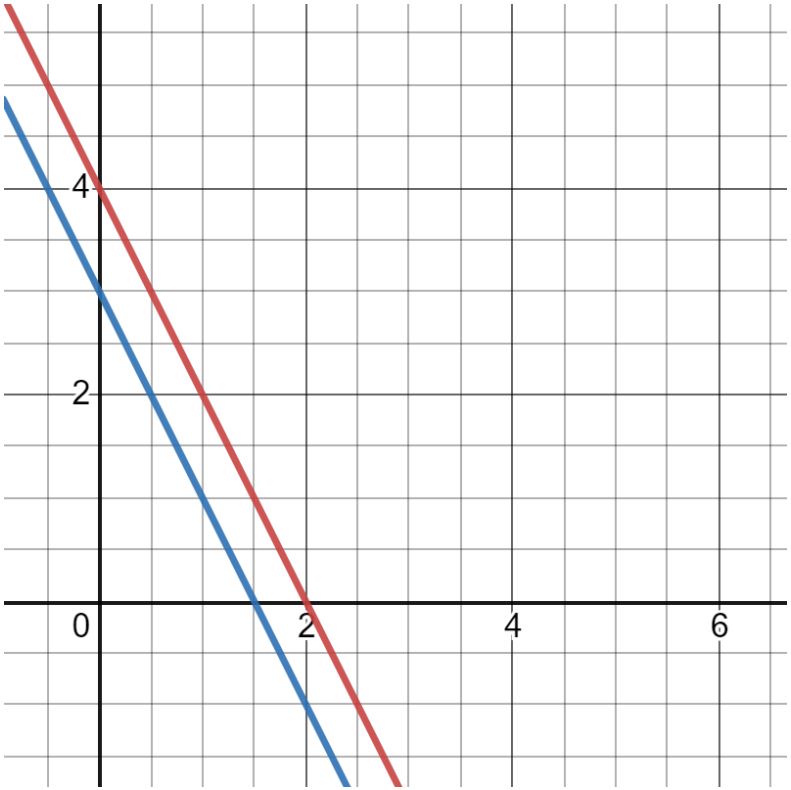
Changes in Price (cont.)

- Suppose I gave you the equation $y = mx + b$, for instance, $y = -2x + 4$
- A shift in demand is akin to changing the value of b, say from 4 to 3:

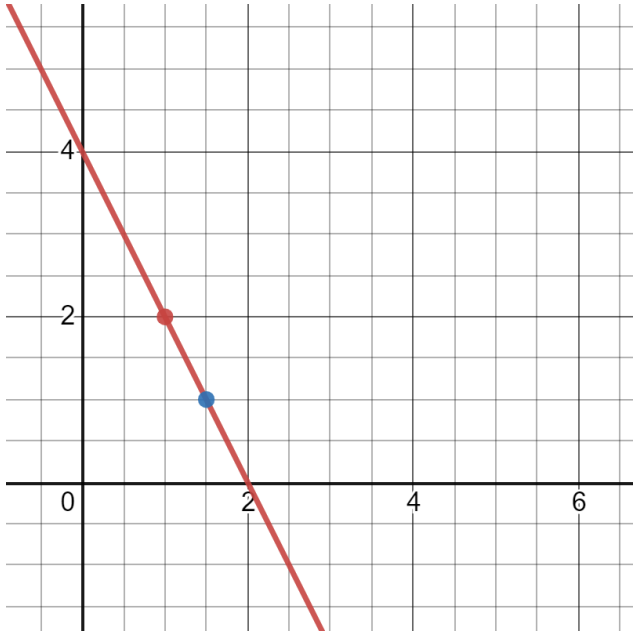


Changes in Price (cont.)

- However, suppose that I instead said that y changed from 2 to 1. How do I move the curve?

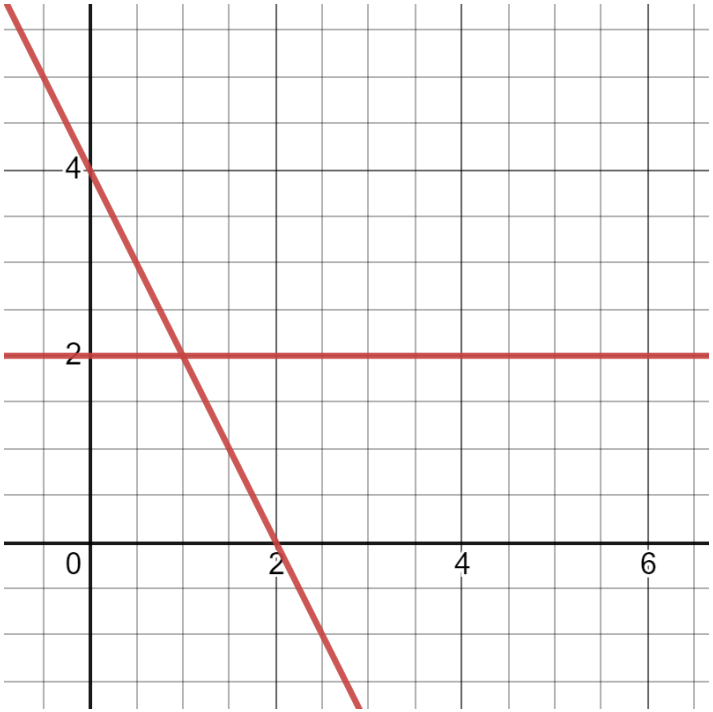
Changes in Price (cont.)

- However, suppose that I instead said that y changed from 2 to 1. How do I move the curve?
- A: I don't. If $y = 2$, then I know that we are at the point $(1, 2)$ on the curve. If the y value dropped to 1, then I just move along the curve to $(1.5, 1)$



Changes in Price (cont.)

- Put another way, if I write demand as $P = -2Q + 4$, and tell you that the price is $P = \$2$:



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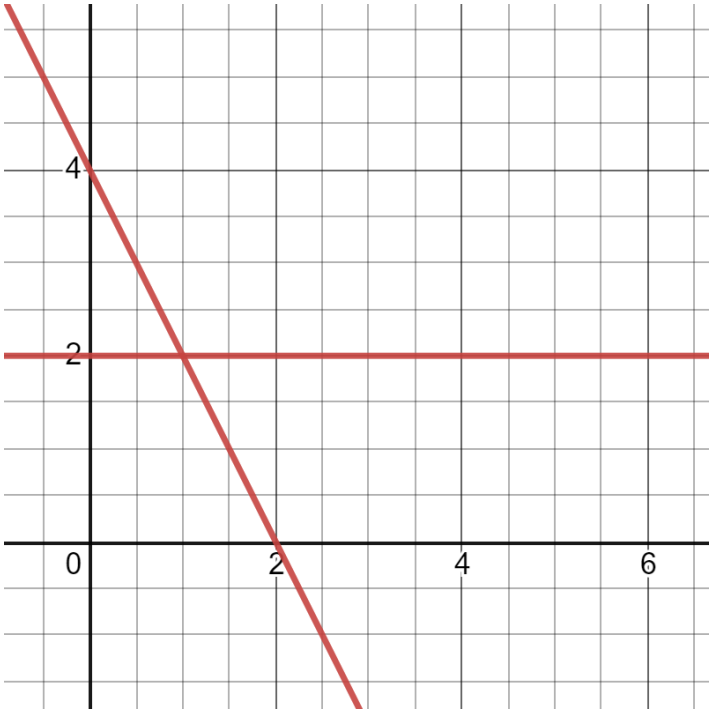

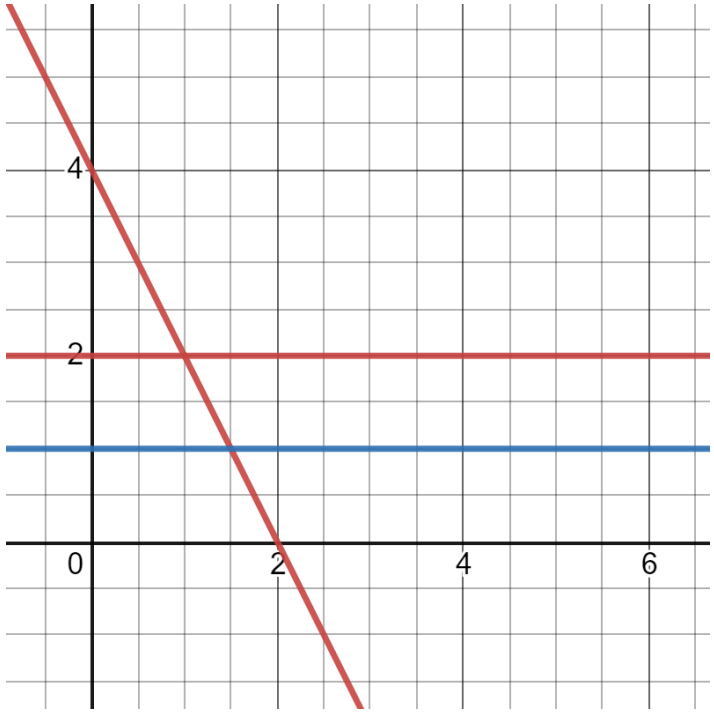

- Then changing the price (to $P = 1$) will just cause us to move from the one intersection point to the other[4]

[4] To be clear, we will never write the horizontal price lines (with the exception of ceilings/floors), they are just for illustration

Summary of Demand Shifts

Variable	A Change in This Variable . . .
Price of the good itself	Represents a movement along the demand curve
Income	Shifts the demand curve
Prices of related goods	Shifts the demand curve
Tastes	Shifts the demand curve
Expectations	Shifts the demand curve
Number of buyers	Shifts the demand curve

- When demand shifts, it is best to say that "the demand curve shifts" or that "demand shifts"
- When there is a movement along the curve, it you should make this clear by saying something to the effect of a "movement along the demand curve", or you can say that quantity demanded goes up or down (but you should make clear that you mean a movement not a curve shift)
- In short, do not say in either case that "demand moves", be clear about what you mean, and use the terminology presented; otherwise I will assume you do not know what you are talking about

Exercise 1

- Suppose that the market demand curve for cereal is given by

$$6Q + 3P = 18$$

Graph the demand curve and show what would happen if the price of cereal changed from \$2 to \$5. What is the quantity demanded?

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- Solution

Exercise 2

- Suppose that Chad and Brad are the only people who listen to Drake albums anymore. Their demand schedules are given by

P	Q_C	Q_B
\$0	20	25
\$5	10	15
\$8	8	9
\$10	5	6
\$12	3	4
\$15	2	3
\$20	0	2

Graph their individual demand curves and the market demand curve. Fill in the above table with the market demand values

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Exercise 3

- Suppose that Angela and Maria both have demand curves given by

$$A : q_a + \frac{1}{3}P = 2$$

$$M : 6q_m = -\frac{4}{6}P + 8$$

Construct the equation for market demand. Write it as P in terms of Q

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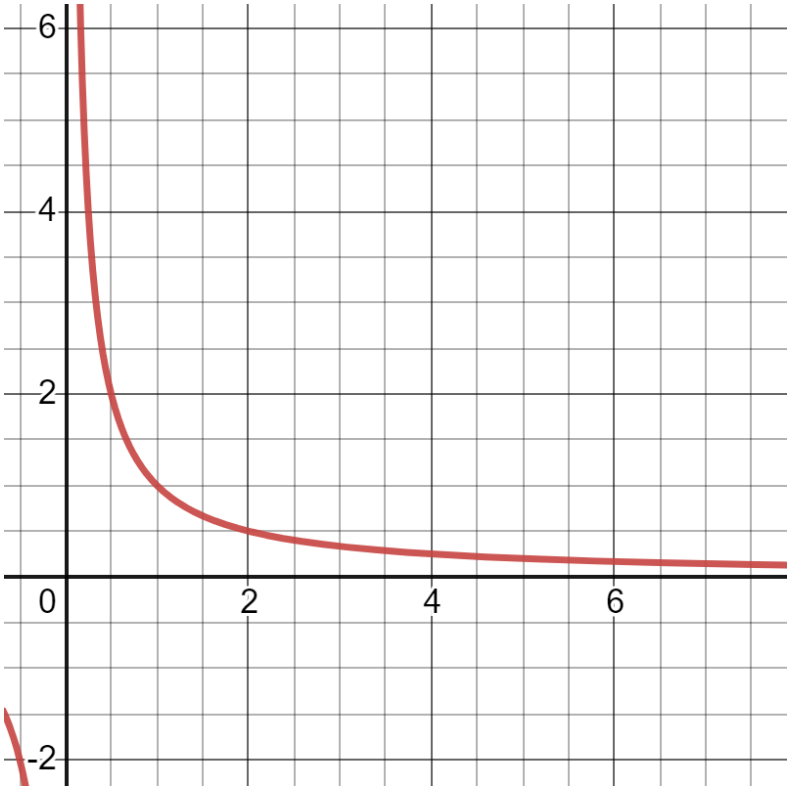
- Solution

Exercise 4

- Suppose that demand for coffee is given by $P = \frac{1}{Q}$:



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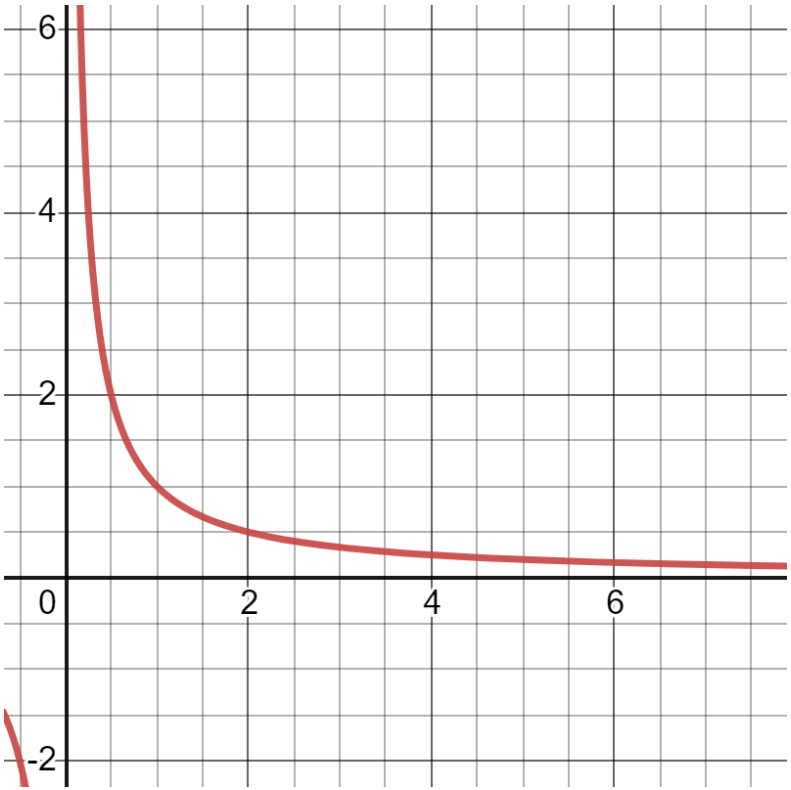
- Suppose that demand for coffee is given by $P = \frac{1}{Q}$:



- If the price of creamer falls, show what happens to the demand for coffee
  - If there is a movement along the curve, you may draw it however you like
  - If the curve shifts, shift it either 1 unit to the right or 1 unit to the left

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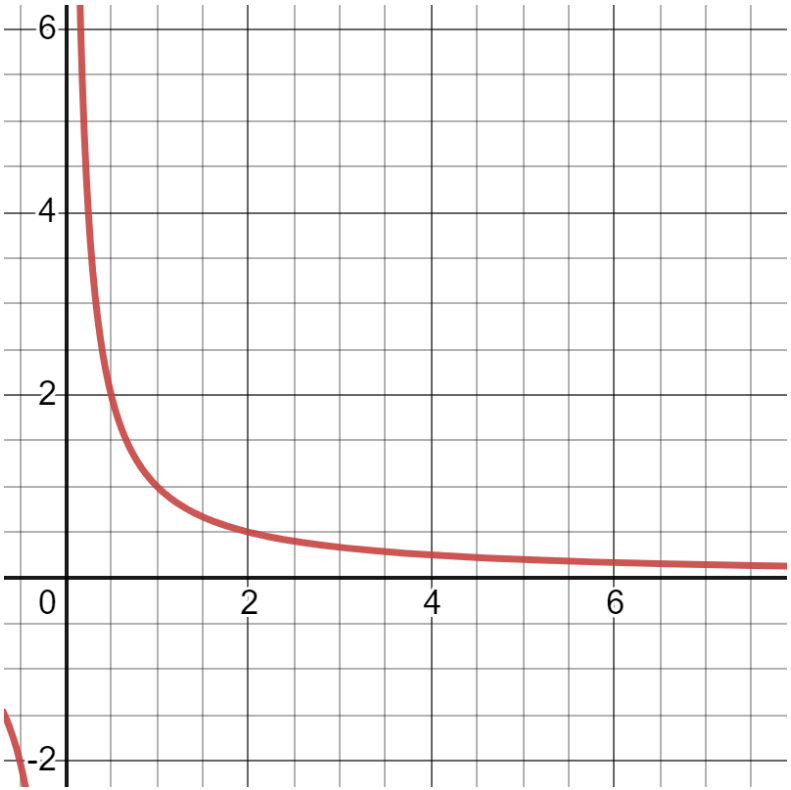

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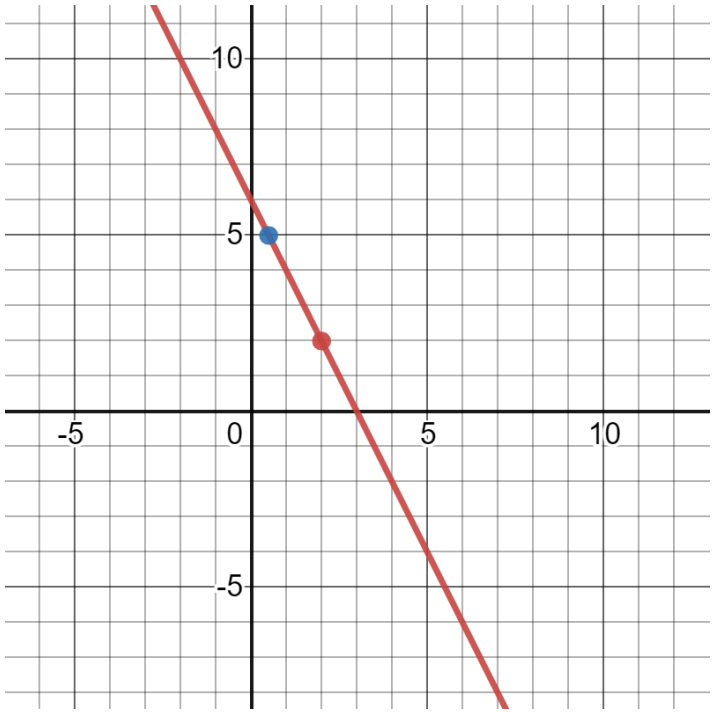
  - If there is a movement along the curve, you may draw it however you like
  - If the curve shifts, shift it either 1 unit to the right or 1 unit to the left
- Solution + Bonus Activity

Solution 1

- Solve for P in terms of Q:

$$P = -2Q + 6$$

Then we move from the red point to the blue point in the following figure:

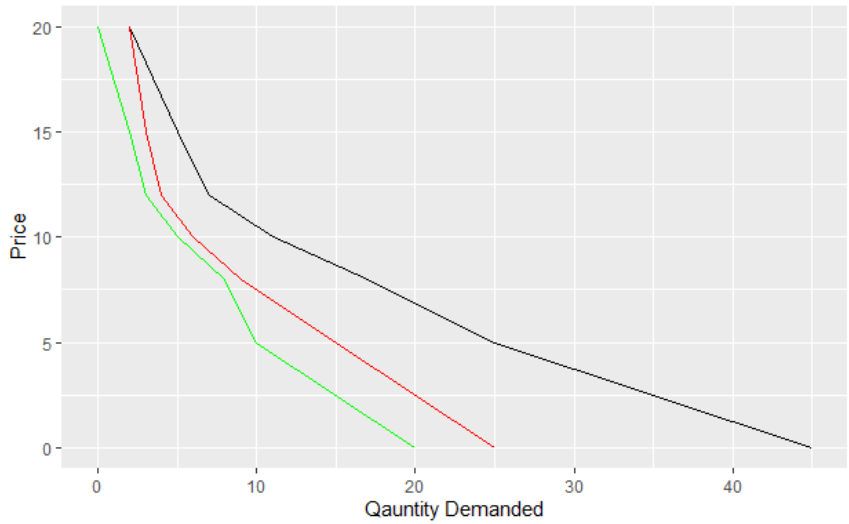


The new quantity demanded is 0.5 units

Solution 2

- Horizontally add the individual quantities demanded. The graph should look as follows

P	Q_C	Q_B	Q_M
\$0	20	25	45
\$5	10	15	25
\$8	8	9	17
\$10	5	6	11
\$12	3	4	7
\$15	2	3	6
\$20	0	2	2



Solution 3

- Solve both equations for q:

$$A : q_a = -\frac{1}{3}P + 2$$
$$M : q_m = -\frac{1}{9}P + \frac{4}{3}$$

- Adding the quantities (never add prices) gets you the equation

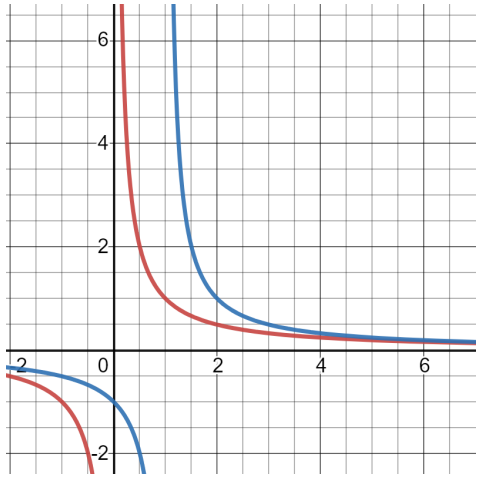
$$Q = q_a + q_m = -\frac{4}{9}P + \frac{10}{3}$$

Which can be solved to be

$$P = -\frac{9}{4}Q + \frac{15}{2}$$

Solution 4

- The curve shifts to the right, since coffee and creamer are compliments
- As a math refresher, since we are given that the shift occurs by one unit, we know that the new demand curve is described by $P = \frac{1}{Q-1}$:



- As a bonus[5], graph what it would look like if I had said 1 unit up/down instead
- Also do this if I had said demand shifts either 1 unit up & 1 unit right or it shifts 1 unit left & 1 unit down. What is the equation for the graph in this case?

[5] Email me if you would like help with this, or to verify your answer