

A Simple Demand and Supply Game for the Classroom

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Abstract

This paper presents a simple demand and supply game that can reinforce several concepts that are taught using demand and supply curves. These concepts include how an equilibrium price emerges in a market; how price controls reduce the number of transactions in a market; and why cartels will fall apart. In order to give instructors an idea of what to expect when running this game, this paper reports the outcomes from when the game was played in six different classes.

Introduction

Students usually don't understand a concept until they witness its application. Classroom games can provide these applications. This paper presents such an application for some of the concepts that are typically taught by using demand and supply curves. These concepts include how an equilibrium price emerges in a market; how price controls reduce the number of transactions in a market; and why cartels will fall apart.

Holt (1996) created a demand and supply game that attempted to mimic the activity in a futures market trading pit. He used playing cards to determine the players' preferences. Each student got a card. The red cards gave the value potential buyers placed on the futures contracts. Black cards gave the lowest prices potential sellers would accept for their contracts. However, this game was costly to run. Before the class, the instructor had to select an arrangement of cards that would allow the price to converge. This arrangement, quite obviously, would vary with the class size. The game was also costly to run because it required teaching assistants to record the agreed-upon prices.

Park (2010) created another demand and supply game. In his game, the instructor provides one jar full of nickels for every three students in the class. The students have to guess how many nickels are in the jars. Then, the instructor randomly assigns ownership of the jars to students. A jar owner will sell it if he or she can find a consumer who is willing to pay more than the owner believes is in the jar. If the owner sells a jar and earns a profit, she can keep it. If a sale results in a loss, the original jar owner is on the hook for this loss. On the other side of a possible transaction, a consumer will pay to buy a jar if she believes it has more money in it than the owner does. This consumer will be willing to bid a price that is high enough to purchase the jar. If the buyers are successful, they earn money. If not, they lose money.

This is a clever game but probably not worth running in a classroom. An instructor has to create 10 coin-filled jars for a class of 30 students. This is a lot to carry to class and an expensive game for the instructor to set up. From the students' perspective it can be expensive as well. Students will be unhappy if the instructor follows through and makes

them pay money for making bad purchases or for selling jars at too low of a price. And if the instructor does not force students to pay up, students will be unlikely to make real bids – that is, bids tied to their incentives.

The aforementioned games offer instructors fun, different ways to reinforce the lessons of the demand and supply curve model. But these games are complicated and costly enough that many instructors will not use them. This paper presents a very simple game that is much easier to set up than the previously mentioned games. Instructors only need to make copies of the game sheets found in the appendix. The game also does not require students to spend any money. Hopefully, by providing an easy to use and monetarily costless market game that is readily available by accessing this journal, this paper's games will encourage more instructors to use market games when they teach the demand and supply model.

The games in this paper are probably most closely related to the games found in Bergstrom and Miller's (1997) book, which contains a series of classroom games. Each of their games illustrates a different concept. But unfortunately, their games are unrelated; consequently, students will struggle to compare how the results of their different games relate to each other. In contrast, the games that appear in my paper are all variations of a single game. My approach produces a benchmark set of results, which students can readily compare to the results they will find in the other games.

Description of the Game and How to Play Round One

In the game outlined in this paper, consumers buy Bundy Burgers from firms. The instructor uses the game sheets in the appendix to split the class up into two equally sized groups. There are three game sheets for firms, labeled A, B, and C and three game sheets for consumers also labeled A, B, and C. Before class, the instructor should collate the game sheets so they appear in the following order: Supply A, Demand A, Supply B, Demand B, Supply C, and Demand C. After the sheets are collated, the instructor should make enough copies so every student can have a game sheet. Then when in class, the instructor should pass out the forms so every student gets one. This process ensures that, in the game, the number of consumers and the number of firms will be the same or, at most, only one person removed from being the same.

The instructor should explain the players' goals. Consumers want to maximize their consumer surpluses and producers want to maximize their producer surpluses. At this point, the instructor should explain how consumers will act by referring to the first consumer game sheet, labeled Demand Version A. The instructor should point out that the person's value for a burger is listed on the sheet. In this case, the value is \$8.50. Then the instructor should explain that at a price of \$9 per burger, the consumer won't buy the burger since his or her consumer surplus would be negative 50 cents. And at the same time the instructor should explain that at a price of \$8, the consumer will purchase the burger because he or she can gain a positive consumer surplus of 50 cents. And of course, the consumer would be even more eager to purchase the burger for \$7, since the consumer surplus would increase to \$1.50. The instructor will mention that the goal of the consumers is to negotiate the lowest price that they can for a burger. Doing so will give consumers the largest consumer surpluses that they can obtain.

The instructor should also explain a restriction of the game. It is that the consumer is only allowed to buy burgers at prices that are in even dollar increments. The only allowable prices are \$8, \$7, \$6, \$5, and \$4. This restriction will make it easier for the instructor to tabulate the results so that they can be analyzed and explained by the class. At this point, the consumers should again be reminded that they can only agree to pay prices that leave them with positive consumer surpluses. The instructor should also emphasize that different game sheets will indicate consumers place different values on burgers.

Next, the instructor should explain how producers will act by referring to the first game sheet for a firm, which is labeled Supply Version A. This sheet lists the cost of producing a burger, which is \$5.50. The instructor should explain that the student with this sheet should only agree to a price above \$5.50. So this student, playing the role of a firm, would refuse to sell a burger for \$5 since doing so would result in a producer surplus of negative 50 cents. The student, on the other hand, would agree to a \$6 price to gain a producer surplus of positive 50 cents. While the student, acting as a firm, would agree to a \$6 price, she would like higher prices even more since these higher prices will give her more producer surplus. Here again, the student should be reminded that the sellers can only agree to whole-dollar prices and that each seller must earn a positive producer surplus to be willing to sell a burger.

Now that buyers and sellers know their goals and the game's acceptable prices, the instructor should explain how firms and consumers will interact. The instructor should explain that we will play this game one round at a time. In round one, buyers and sellers will move throughout the classroom to pair up to negotiate their transaction prices. To help buyers find sellers, I ask the sellers to raise their hands and ask buyers to seek out the sellers. Once these parties pair up, they negotiate a price that gives the buyer a positive consumer surplus and the firm a positive producer surplus. There will be more than one price that both parties find acceptable, so each party to the transaction should negotiate to get the best deal possible. As the negotiations are going on, the instructor should remind students that they can seek different people to negotiate with. For instance, if a seller is asking too high a price, a buyer can shop around and get a better deal. Or if a consumer seems too cheap, the seller can seek out a different customer in an attempt to be able to charge a higher price. Once a price is agreed upon, each player will write the price and surplus (either consumer or producer) on their game sheets. Each player will sign the other player's game sheet to signify that a deal has been struck. Once a price is agreed upon, the round is over and the players should return to their seats. In each round, a seller and a buyer can only make one transaction.

When round one is finished, the instructor should list all of the different acceptable prices on the board from \$4 to \$8. Then, the instructor should ask the sellers who sold their burgers for \$4 to raise their hands. The instructor should count the number of raised hands and put this number next to \$4 on the board. The instructor should repeat this process for the remaining acceptable prices. Then above this column of numbers, the instructor should write round 1.

After the number of sales at each price is listed on the board, the instructor should ask the class to describe the distribution of prices. Usually, this distribution will center

around \$6, although there are often several sales made at \$7 and at \$5 and a few sales made at \$8 and at \$4.

How to Play Rounds Two and Three and the Likely Results from the First Three Rounds

Now that round one is finished, the students will play the game again in round two. This round is identical to round one. However, the instructor should insist that in this round and in future rounds, consumers must buy their burgers from different firms. When all of the students have agreed on their prices, the instructor should once again ask the suppliers how many burgers they sold at each price. The process of generating these numbers is the same as it was in round one: the instructor will list off each acceptable price and the sellers who sold a burger at each price will raise their hands at the appropriate time. As the instructor gathers this information, he or she should list it on the board under a column labeled Round Two.

When round two is finished, the instructor should, once more, ask the class to analyze the distribution of sales at the various prices. In some classes, the prices become more centered around \$6 per burger. This occurs because the previous round taught the market participants what to expect. They learned that \$6 was the prevailing price. This knowledge made consumers more likely to seek new burger establishments if firms demanded high prices. This knowledge also encouraged a firm to seek a different buyer if the firm was negotiating with a potential consumer who tried to get away with paying a low price. Next, the students should repeat exactly the same process one more time – in round three.

The instructor should proceed to explain how these results are consistent with the story told by the demand and supply curves. The instructor should draw demand and supply curves for burgers on the board so that the curves intersect at a \$6 price. The instructor should explain that the model makes a simplifying assumption that all burgers are sold at the same price. And then the instructor should mention that this game has shown that this assumption is reasonable. The games typically illustrate that the market has a prevailing price. The game also illustrates that everyone who wants to buy a burger can get one. And it shows that every firm that wants to sell a burger can (at least if there are enough customers in this particular game).

The instructor should use the graph on the board to explain the incentives that pulled the price to \$6. This can be done by drawing a straight line across the graph at \$8 and then identifying the excess supply. It indicates that firms want to sell many more burgers than consumers want to buy. Firms run the risk of having unwanted inventory, which in the game is an unsold burger. To unload this inventory, the firms that cannot sell their burgers have an incentive to lower their prices. By doing so, these firms can encourage consumers to buy more burgers. By making the sale, the firms are better off since they can earn a positive producer surplus. The instructor should emphasize that as long as the price is above \$6, there is an excess supply, which gives firms an incentive to lower their asking prices to make sales. And once the price reaches \$6, there is no longer an excess supply. At this \$6 price, firms can sell all of the burgers that they wish to sell, so they no longer have an incentive to further decrease the price. Therefore, to reiterate, any price above \$6 per burger will drop to \$6.

Now that students understand, within the context of the game, why the price won't be above \$6, the instructor should explain why it won't be below \$6. The instructor should draw a new graph where the demand and supply curves for burgers intersect at \$6 per burger. The new graph will allow the students to follow the argument without the lines used in the previous explanation getting in the way of the new explanation. On the new graph, the instructor should draw a horizontal line at a \$4 price and label the excess demand. It indicates that there is a burger shortage: at a \$4 price, consumers want more burgers than firms are willing to provide.

But the shortage also provides incentives to the market participants that will cause the price to increase. Firms will realize that they can get away with increasing the price of a burger and still be able to make a sale. These firms, as students discovered playing the game, seek to maximize their producer surplus, so they love the idea of being able to charge higher prices. Firms will continue to be able to get away with increasing their prices as long as there is an excess demand. Consequently, they will increase the price to \$6. At this point, the excess demand becomes zero. Any firms that increase their asking price beyond \$6 are unlikely to make a sale. And as we already saw, the unwanted inventory that results gave the firms an incentive to decrease the price back to \$6 per burger.

Round 4

Now that students understand how a market works when it is allowed to operate without government interference, they are ready to explore how price controls affect market outcomes. In round four, the government imposes a price ceiling, which says that \$4 is the highest price that a firm can charge for a burger. Before the round starts, the instructor needs to emphasize that firms whose costs of producing burgers exceed \$4 will not agree to sell burgers, since doing so would result in negative producer surpluses. So firms with a cost of \$5.50, for example, would rather not make the sale than sell a burger at a \$4 price. These firms should not even bother to raise their hands to attract customers.

This round plays out just like the previous rounds did, except now some firms will not sell any burgers. When the instructor lists the number of sales made at each allowed price, there will be a few sales made at \$4. There won't be any sales made at higher prices since those sales were outlawed. The instructor should emphasize that the price ceiling reduced the number of transactions in the market. At the low \$4 price, firms want to sell fewer burgers than they sold when the price was \$6. The instructor should further emphasize that the most transactions occur at the price given by the intersection of the demand and supply curves. And the instructor should also emphasize that any price control will cause fewer sales to be made. The price ceiling is just one illustration of this principle.

By asking a series of questions, the instructor should focus the students' attention on how the price ceiling affected the welfare of different groups. The first question is: who is made better off by the price ceiling? The answer is obvious. It is consumers who were able to buy burgers at this low price – after all, paying \$4 for a burger is better than paying \$6 for it. The next question is: who is made worse off? This has a more complicated answer since it involves more than one group. Firms that can produce

burgers at costs of \$4.50 or \$5.50 are worse off since they will not sell burgers at the low \$4 price. This is a bad outcome for them because at least at the \$6 market price they were able to sell burgers and to get positive producer surpluses. Firms that sell burgers are worse off now since they are only receiving \$4 per burger rather than the \$6 per burger they got before the price ceiling was imposed. And lastly, consumers that can't buy burgers are worse off. They do not get any consumer surpluses. At least at the market-clearing price of \$6, they bought burgers and earned some consumer surpluses.

Round 5

Round 5 will illustrate the other way in which price controls will reduce the number of burgers sold. In this case, the instructor can say that the government learned from its mistake of requiring a very low \$4 price. It learned that firms reacted by cutting production. So to remedy that problem and to encourage more production, the government implements a price floor. The price floor prevents firms from selling burgers for anything less than \$8. In this case, the government would be correct that firms would want to sell more burgers at an \$8 price than they would at a \$4 price. But, more importantly, the government would be incorrect in believing that the artificially high price would allow more burgers to be sold than were sold at the market-clearing price of \$6.

Before round 5 is played, the instructor should emphasize that consumers should only agree to buy burgers if they get positive consumer surpluses. For example, a consumer who values the burger at \$6.50 should not agree to pay \$8 for it. Such a transaction would make the consumer worse off, as the resulting negative \$1.50 in consumer surplus would illustrate. This customer should not even leave his or her seat to try to buy a burger. Once the negotiations are finished, and the results appear on the board, the students should analyze the data. They will find that the \$8 price floor, meant to encourage sales by providing greater incentives to firms, actually reduced the number of burgers sold in comparison to the sales that occurred when the price was \$6 per burger.

After round 5 has been analyzed, the instructor should focus the class discussion on the lesson that can be learned from rounds 4 and 5 when considered together. This lesson is that the most transactions occur at the price where the demand and supply curves cross. Any government law that alters that price will result in fewer sales. At an artificially low price, firms will agree to sell fewer burgers. At an artificially high price, consumers will want to buy fewer burgers.

At this point, the instructor should ask the class if anyone was made better off by the \$8 price floor. The answer is yes: firms that were able to sell their burgers were better off. They were receiving \$8 per burger rather than the \$6 they would have obtained without the price control. The instructor should then ask the class who was worse off because of the price floor. There are several groups to mention. The firms that failed to sell their burgers were worse off. They won't get any producer surplus. At least at the \$6 market-clearing price, they obtained positive producer surpluses. Consumers that bought burgers are worse off. They get stuck paying \$8 rather than \$6 for burgers. And

finally, consumers who cannot afford to pay \$8 for a burger are worse off. They will not get the burger and the consumer surplus that they could have obtained at the \$6 price.

Round 6

The final round is meant to illustrate that cartels fall apart. In this round, there are not any government-mandated price controls. Instead, all the firms get together and agree to fix the price at \$8. That is, firms are not supposed to charge any other price.

But since the cartel has no way to enforce this agreement, firms are able to charge lower prices in secret without fearing a penalty if caught. The instructor should emphasize the difference between a cartel agreement and a price control; namely, the government has the means to enforce its pricing rule and the cartel does not. In this game, players could not cheat on the government-mandated price control. But players can cheat on the cartel agreement without bearing any negative consequence.

After completing this round, the analysis of the results will probably show some interesting results. First, and most importantly, some firms will cheat on the cartel agreement. Some of them will charge a price below \$8 in order to make a sale and to get some producer surplus. Second, more sales will occur in this round than occurred in the round when the government imposed an \$8 price floor.

Results from Running the Game

To give instructors a more concrete sense of what to expect when running the game in their classes, I report the results from when I ran the game in six different classes at the University of Central Arkansas during the Fall 2023 semester. Of these, three were Principles of Microeconomics classes, two were Principles of Macroeconomics classes, and one was a survey of economics class. Although I ran the game in all six classes, only the survey class was my own. By the time I ran the experiment, all of the classes had covered supply and demand and the survey and microeconomics classes had covered price controls.

The aggregated results appear in Table 1.A. The numbers represent the number of transactions that occurred at the various possible prices for each of the six rounds of the game. Table 1.B expresses these aggregate results for each round as the percentage of transactions that occurred at each price. During the first three rounds, when there were no price controls, 60% to 67% of the transactions occurred at a price of six dollars and at least 96% percent of the transactions occurred within one dollar of the six-dollar price. These results confirm the notion that the prices in a market center around a single price. The expected results also occurred in rounds four and five (when there were price controls): fewer transactions occurred compared to the outcomes when there were no price controls.

The final column of the tables shows the results when the suppliers formed a cartel and pledged to charge \$8 per hamburger. Several interesting results emerged in this round of play. First, as expected, many suppliers cheated on the cartel agreement and sold hamburgers at a price below \$8. Second, fewer hamburgers were sold in the cartel case than in any of the first three rounds (when there was no cartel agreement or any type of price control). So obviously, some sellers chose to refrain from making sales instead of breaking the cartel agreement. Third, and perhaps surprisingly, the cartel

agreement appears to have increased how often a seller was able to sell at the two highest prices (\$7 and \$8). In fact, in the cartel case, 50% of the sales occurred at a \$7 or \$8 price. In contrast, in the first three rounds of the game, when the participants negotiated free of price controls or cartel agreements, these high prices made up only about 20% to 23% of the sales (about half the percentage that we saw with the cartel).

The cartel results provide an instructor the opportunity to discuss a topic that is not normally covered in a principles class. Specifically, the cartel agreement may have provided an anchor. An anchor provides a starting point for negotiations and people typically do not move away from the anchor enough to reach the result that would occur without the anchor. In this case, the cartel agreement caused more transactions to occur at the two highest prices (compared to the prices that were agreed to in the first three rounds).

Issues that Arose During the Game

During the first round of the game, some students wanted to either sell or buy more than one burger. I was able to keep this from happening by reminding them several times, while they were playing the game, that they could only be involved in one transaction per round.

Tables 1.C -1.H present the results from each class. The individual outcomes match the aggregate outcomes with one exception.: Table 1.H. In this class, a \$7 price occurred almost as often as a \$6 price. The results from this game point to another issue that instructors should be aware of. This class only had twelve students. And in small classes, the typical results may vary more than they would in a large class – when classes convincingly settled on \$6 as their typical price in the first three rounds.

Students' Perceptions of the Game

In order to evaluate what the students thought of the game, I had them fill out an anonymous survey. The first question asked, "Is the supply and demand game a worthwhile use of class time (yes or no)? The students overwhelmingly thought the game was a good use of class time. Every student answered this question with a yes except two (one wrote no and the other wrote both yes and no).

The second question of the survey asked, "What do you like about the supply and demand game?" The most common responses were that they liked the interactive format of the game (which provided a nice change from their typical lectures); that they thought the game was fun; that they could see how what they learned in class actually occurred as a result of their own decisions; that the game was an easy way for a hands-on learner to understand the supply and demand model; that the game helped them understand the concepts better than lectures did; that they enjoyed applying the concepts rather than just memorizing them; that the game provided a tangible representation of the supply and demand model that was easier to understand than looking at the numbers on a graph; and that generating data from their own decisions made the concepts more real.

The final question of the survey asked, "How did the game increase your understanding of the supply and demand model?" The following responses occurred most frequently: The interactive nature of the game helped me finally understand how to calculate

consumer and producer surpluses; The game helped me understand price ceilings and price floors; The game helped me see a market from the perspective of buyers and sellers; The game gave me a deeper understanding of both demand and supply; The game helped me grasp how prices are determined; And, the game helped me understand what was going on in the supply and demand graphs.

Conclusion

This paper presents a demand and supply game that is simpler than the other games that appear in journals. Its simple approach allows the students to more easily see their actions result in the outcomes predicted by the demand and supply model. This game, like other games, provides professors with another way to convey some of the important results that emerge from the demand and supply model. But this paper has an advantage over the existing games that appear in academic journals because it is simpler for instructors to set up and because it does not cost students any money to play. Hopefully this game, by being so easy to run, will encourage more instructors to teach the demand and supply model with a game. This would be a good outcome since students are more likely to believe and understand the model's predictions when they are exposed to a game that provides them with evidence that these predictions come to pass as a result of their own decisions.

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ⁱSeveral articles have found that classroom experiments improve student outcomes in economics classes. These articles include Durham, McKinnon, and Schulman (2007); Frank (1997); and Dickie (2006).

ⁱⁱI would like to thank David "Mitch" Mitchell for his comments that spurred me to create this game. These comments centered around his article that used a classroom experiment to analyze futures markets (See Mitchell, Hunsader, and Parker (2011)). I would also like to thank the following people for making valuable comments on earlier drafts of this paper: Rania Al-Bawwab, Jacob Bundrick, Thomas Snyder, and an

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Table 1. Results from Six Plays of the Game

Table 1.A: Aggregate Results from Six Plays of the Game

Price/Round	1)	2)	3)	4)	5)	6)
\$4	1	--	2	28	--	--
\$5	9	12	12	--	--	2
\$6	52	49	46	--	--	28
\$7	14	18	16	--	--	22
\$8	1	--	1	--	29	8

Table 1.B Aggregate Results Expressed in Percentages

Price/Round	1)	2)	3)	4)	5)	6)
\$4	1.30%	--	2.60%	100%	--	--
\$5	11.69%	15.19%	15.58%	--	--	3.33%
\$6	67.53%	62.03%	59.74%	--	--	46.67%
\$7	18.18%	22.78%	20.78%	--	--	36.67%
\$8	1.30%	--	1.30%	--	100%	13.33%

Table 1.C Results from A Principles of Microeconomics Class

Price/Round	1)	2)	3)	4)	5)	6)
\$4	1	--	--	5	--	--
\$5	2	3	2	--	--	--
\$6	5	8	8	--	--	4
\$7	6	4	4	--	--	6
\$8	--	--	--	--	3	3

Table 1.D Results from A Principles of Macroeconomics Class

Price/Round	1)	2)	3)	4)	5)	6)
\$4	--	--	--	4	--	--
\$5	1	1	--	--	--	1
\$6	9	10	11	--	--	4
\$7	3	2	2	--	--	4
\$8	--	--	--	--	6	--

Table 1.E Results from A Principles of Macroeconomics Class

Price/Round	1)	2)	3)	4)	5)	6)
\$4	--	--	1	6	--	--
\$5	2	3	4	--	--	--
\$6	9	8	7	--	--	7
\$7	3	4	2	--	--	3
\$8	--	--	--	--	5	2

Table 1.F Results from A Principles of Microeconomics Class

Price/Round	1)	2)	3)	4)	5)	6)
\$4	--	--	1	6	--	--
\$5	--	2	2	--	--	--
\$6	15	12	10	--	--	5
\$7	1	2	3	--	--	4
\$8	--	--	--	--	8	2

Table 1.G Results from Survey of Economics Class

Price/Round	1)	2)	3)	4)	5)	6)
\$4	--	--	--	5	--	--
\$5	4	2	4	--	--	1
\$6	9	9	8	--	--	5
\$7	--	3	2	--	--	4
\$8	1	--	--	--	5	1

Table 1.H Results from A Principles of Microeconomics Class

Price/Round	1)	2)	3)	4)	5)	6)
\$4	--	--	--	2	--	--
\$5	--	1	--	--	--	--
\$6	5	2	2	--	--	3
\$7	1	3	3	--	--	1
\$8	--	--	1	--	2	--

The numbers represent the number of transactions that occur at each price in each of the six rounds for each administration.

Appendix

Supply Version A

You are a burger producer who makes Bundy Burgers. You will get to decide whether to sell a burger during each of the rounds that we play this game. For each round, I have listed the cost to you for making a burger. You are trying to maximize your producer surplus, which is the difference between the price that you charge and the cost of the burger.

When the round begins, all of the suppliers will hold up their hands and buyers and sellers will find each other. If a buyer wants to buy your burger, have the buyer sign your sheet and you sign the buyer's sheet. You may only sell one burger per round. If you do not make a sale, you receive no producer surplus.

After agreeing to a price with a buyer, you will write down the agreed-upon price on the sheet of paper that I provide. You must charge a price that is a whole number, such as \$4, \$5, and so on. You cannot charge \$4.50 or any other price that involves cents. The only allowable prices in this game are \$4, \$5, \$6, \$7, and \$8. For each round, keep track of the price, producer surplus, and the name of your customer.

Round 1

Cost of burger = \$5.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Round 2

Cost of burger = \$5.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Round 3

Cost of burger = \$5.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Next, suppose the government decides to help consumers by making burgers more affordable. It does this by passing a law that makes it illegal for a seller to charge more than \$4. That is, a firm can only charge \$4 (higher prices are illegal and lower prices are not allowed in this game).

Round 4

Cost of burger = \$5.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Next, assume the government repeals the previous law and replaces it with a law that attempts to help burger producers. These producers have successfully lobbied the government to pass a law that makes it illegal to sell a burger for less than \$8. That is, a firm can only sell the burger for \$8 or more.

Round 5

Cost of burger = \$5.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Round 6

Assume that there are no government price controls. However, the sellers have all agreed to voluntarily charge \$8 for a burger. But, if you (as a seller) cheat on the agreement, there is no punishment even if you were caught.

Cost of burger = \$5.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Supply Version B

You are a burger producer who makes Bundy Burgers. You will get to decide whether to sell a burger during each of the rounds that we play this game. For each round, I have listed the cost to you for making a burger. You are trying to maximize your producer surplus, which is the difference between the price that you charge and the cost of the burger.

When the round begins, all of the suppliers will hold up their hands and buyers and sellers will find each other. If a buyer wants to buy your burger, have the buyer sign your sheet and you sign the buyer's sheet. You may only sell one burger per round. If you do not make a sale, you receive no producer surplus.

After agreeing to a price with a buyer, you will write down the agreed-upon price on the sheet of paper that I provide. You must charge a price that is a whole number, such as \$4, \$5, and so on. You cannot charge \$4.50 or any other price that involves cents. The

only allowable prices in this game are \$4, \$5, \$6, \$7, and \$8. For each round, keep track of the price, producer surplus and the name of your customer.

Round 1

Cost of burger = \$4.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Round 2

Cost of burger = \$4.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Round 3

Cost of burger = \$4.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Next, suppose the government decides to help consumers by making burgers more affordable. It does this by passing a law that makes it illegal for a seller to charge more than \$4. That is, a firm can only charge \$4 (higher prices are illegal and lower prices are not allowed in this game).

Round 4

Cost of burger = \$4.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Next, assume the government repeals the previous law and replaces it with a law that attempts to help burger producers. These producers have successfully lobbied the government to pass a law that makes it illegal to sell a burger for less than \$8. That is, a firm can only sell the burger for \$8 or more.

Round 5

Cost of burger = \$4.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Round 6

Assume that there are no government price controls. However, the sellers have all agreed to voluntarily charge \$8 for a burger. But, if you (as a seller) cheat on the agreement, there is no punishment even if you were caught.

Cost of burger = \$4.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Supply Version C

You are a burger producer who makes Bundy Burgers. You will get to decide whether to sell a burger during each of the rounds that we play this game. For each round, I have listed the cost to you for making a burger. You are trying to maximize your producer surplus, which is the difference between the price that you charge and the cost of the burger.

When the round begins, all of the suppliers will hold up their hands and buyers and sellers will find each other. If a buyer wants to buy your burger, have the buyer sign your sheet and you sign the buyer's sheet. You may only sell one burger per round. If you do not make a sale, you receive no producer surplus.

After agreeing to a price with a buyer, you will write down the agreed-upon price on the sheet of paper that I provide. You must charge a price that is a whole number, such as \$4, \$5, and so on. You cannot charge \$4.50 or any other price that involves cents. The only allowable prices in this game are \$4, \$5, \$6, \$7, and \$8. For each round, keep track of the price, producer surplus and the name of your customer.

Round 1

Cost of burger = \$3.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Round 2

Cost of burger = \$3.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Round 3

Cost of burger = \$3.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Next, suppose the government decides to help consumers by making burgers more affordable. It does this by passing a law that makes it illegal for a seller to charge more than \$4. That is, a firm can only charge \$4 (higher prices are illegal and lower prices are not allowed in this game).

Round 4

Cost of burger = \$3.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Next, assume the government repeals the previous law and replaces it with a law that attempts to help burger producers. These producers have successfully lobbied the government to pass a law that makes it illegal to sell a burger for less than \$8. That is, a firm can only sell the burger for \$8 or more.

Round 5

Cost of burger = \$3.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Round 6

Assume that there are no government price controls. However, the sellers have all agreed to voluntarily charge \$8 for a burger. But, if you (as a seller) cheat on the agreement, there is no punishment even if you were caught.

Cost of burger = \$3.50

Price agreed to: (write in price here)

Producer Surplus: (write in number here)

Signature of Demander:

Demand Version A

You are a consumer who is considering buying a Bundy Burger. You will get to decide whether to buy a burger and how much to pay several times. For each round of decisions, I have listed the value that you have for burgers below. You are trying to maximize your consumer surplus, which is the difference between your value for a burger and the price you pay. Suppliers and demanders will find each other and negotiate a price. If you want to buy the burger, have the seller sign your sheet and you sign the seller's sheet. You may only buy one burger per round. If you do not make a purchase, you receive no consumer surplus. All agreed-upon prices must be in whole dollars (so \$7.00 is fine but \$7.25 is not). The only allowable prices in this game are \$4, \$5, \$6, \$7, and \$8.

Round 1

Value of burger = \$8.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Round 2

Value of burger = \$8.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Round 3

Value of burger = \$8.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Next, suppose the government decides to help consumers by making burgers more affordable. It does this by passing a law that makes it illegal for a seller to charge more than \$4. That is, a firm can only charge \$4 (higher prices are illegal and lower prices are not allowed in this game).

Round 4

Value of burger = \$8.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Next, assume the government repeals the previous law and replaces it with a law that attempts to help burger producers. These producers have successfully lobbied the government to pass a law that makes it illegal to sell a burger for less than \$8. Since \$8 is the only allowable price that meets this criteria, it is the only price that sellers can charge in this round.

Round 5

Value of burger = \$8.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Round 6

Assume that there are no government price controls. However, the sellers have all agreed to voluntarily charge \$8 for a burger. However, there is a chance that some sellers might cheat on this agreement. But, there is no penalty to them if they do charge a lower price. Try to buy a burger, and by all means, try to get a lower price if you can.

Value of burger = \$8.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Demand Version B

You are a consumer who is considering buying a Bundy Burger. You will get to decide whether to buy a burger and how much to pay several times. For each round of decisions, I have listed the value that you have for burgers below. You are trying to maximize your consumer surplus, which is the difference between your value for a burger and the price you pay. Suppliers and demanders will find each other and negotiate a price. If you want to buy the burger, have the seller sign your sheet and you sign the seller's sheet. You may only buy one burger per round. If you do not make a purchase, you receive no consumer surplus. All agreed-upon prices must be in whole dollars (so \$8.00 is fine but \$7.25 is not). The only allowable prices in this game are \$4, \$5, \$6, \$7, and \$8.

Round 1

Value of burger = \$7.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Round 2

Value of burger = \$7.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Round 3

Value of burger = \$7.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Next, suppose the government decides to help consumers by making burgers more affordable. It does this by passing a law that makes it illegal for a seller to charge more than \$4. That is, a firm can only charge \$4 (higher prices are illegal and lower prices are not allowed in this game).

Round 4

Value of burger = \$7.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Next, assume the government repeals the previous law and replaces it with a law that attempts to help burger producers. These producers have successfully lobbied the government to pass a law that makes it illegal to sell a burger for less than \$8. Since \$8 is the only allowable price that meets this criteria, it is the only price that sellers can charge in this round.

Round 5

Value of burger = \$7.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Round 6

Assume that there are no government price controls. However, the sellers have all agreed to voluntarily charge \$8 for a burger. Still, there is a chance that some sellers might cheat on this agreement. But, there is no penalty to them if they do charge a lower price. Try to buy a burger, and by all means, try to get a lower price if you can.

Value of burger = \$7.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Demand Version C

You are a consumer who is considering buying a Bundy Burger. You will get to decide whether to buy a burger and how much to pay several times. For each round of decisions, I have listed the value that you have for burgers below. You are trying to maximize your consumer surplus, which is the difference between your value for a burger and the price you pay. Suppliers and demanders will find each other and negotiate a price. If you want to buy the burger, have the seller sign your sheet and you sign the seller's sheet. You may only buy one burger per round. If you do not make a purchase, you receive no consumer surplus. All agreed-upon prices must be in whole dollars (so \$7.00 is fine but \$7.25 is not). The only allowable prices in this game are \$4, \$5, \$6, \$7, and \$8.

Round 1

Value of burger = \$6.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Round 2

Value of burger = \$6.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Round 3

Value of burger = \$6.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Next, suppose the government decides to help consumers by making burgers more affordable. It does this by passing a law that makes it illegal for a seller to charge more than \$4. That is, a firm can only charge \$4 (higher prices are illegal and lower prices are not allowed in this game).

Round 4

Value of burger = \$6.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Next, assume the government repeals the previous law and replaces it with a law that attempts to help burger producers. These producers have successfully lobbied the government to pass a law that makes it illegal to sell a burger for less than \$8. Since \$8 is the only allowable price that meets this criteria, it is the only price that sellers can charge in this round.

Round 5

Value of burger = \$6.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier:

Round 6

Assume that there are no government price controls. However, the sellers have all agreed to voluntarily charge \$8 for a burger. Still, there is a chance that some sellers might cheat on this agreement. But, there is no penalty to them if they do charge a lower price. Try to buy a burger, and by all means, try to get a lower price if you can.

Value of burger = \$6.50

Price agreed to: (write in price here)

Consumer surplus: (write in number here)

Signature of supplier: