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ECON 102 Brown – Exam 1 – Practice Exam Solutions

1. C – The study of how people make choices.
2. D – Prioritizing what is best for you as an individual.
3. C – The thought process of consumers.
4. A – It requires individuals to make choices.
5. D – It is used in all decision making.
6. D – Determine whether the assumption leads to accurate predictions about the choices and behavior of CEOs.
7. C – Through the use of positive analysis instead of normative analysis because positive analysis uses statements of facts.
8. D – All of the above. Answers A and B are examples of positive incentives. Answer C is an example of a negative incentive.
9. D – How individuals form their preferences.
10. B – Resources are limited and wants are unlimited.
11. C – Scarce
12. D – Rational self-interest
13. C – Items of value that are used to make other things that satisfy wants.
14. C – If you decide to go to college, you are giving up the full-time job you could be working. If there is little or no chance of you getting a job, the opportunity cost of going to college is lower than if you were giving up a \$300,000 a year job.
15. C – The wage you would have made at a full-time job.
16. G – Both A and C
17. C – Opportunity cost is the value of the next best alternative.
18. A – Any point on or below the PPC is attainable and any point on the PPC is efficient.
19. A – Josh gives up 6 mangos to go from point A to point B.
20. C – Josh gives up 10 bananas to go from point B to point A. Make sure you pay close attention to which way you are moving along the PPC in these problems.
21. B – Josh can pick 56 bananas, Sarah can pick 32 bananas

Josh = 7 bananas an hour x 8 hours = 56 bananas

Sarah = 4 bananas an hour x 8 hours = 32 bananas

22. A – You know the PPC is linear because the opportunity cost is constant as Josh or Sarah pick more of one fruit and less of the other. If the opportunity cost of picking bananas increases as they pick more bananas or vice versa, then the PPC would be bowed.
23. B – Josh can pick 7 bananas an hour or 4 mangos an hour, and he has 8 hours a day to pick them. It will take Josh 5 hours to pick 35 bananas ($35 \text{ bananas} / 7 \text{ bananas an hour} = 5 \text{ hours}$). This means that Josh has 3 hours left to pick mangos. He can pick 4 mangos an hour, so he should be able to pick 12 mangos in 3 hours ($3 \text{ hours} \times 4 \text{ mangos an hour} = 12 \text{ mangos}$). The problem says that he is only picking 10 mangos each day. This point is attainable for Josh; however, it is inefficient because he could pick more mangos or bananas in an 8-hour day than he currently is.
24. C – Sarah can pick 4 bananas an hour or 7 mangos an hour, and she has 8 hours a day to pick them. The problem says that Sarah wants to pick 35 bananas and 10 mangos a day. Immediately you can see that this is an unattainable point for Sarah because she cannot pick 35 bananas in a day even if she spends 8 hours a day picking bananas. If Sarah spent 8 hours a day picking bananas, she would only be able to pick 32 bananas in a day ($4 \text{ bananas an hour} \times 8 \text{ hours} = 32 \text{ bananas}$). Certainly she wouldn't be able to pick 35 bananas a day and 10 mangos.
25. A – Josh should specialize in bananas and Sarah should specialize in mangos. Josh can pick 56 bananas a day ($7 \text{ bananas an hour} \times 8 \text{ hours} = 56 \text{ bananas}$) and Sarah can pick 56 mangos a day ($7 \text{ mangos an hour} \times 8 \text{ hours} = 56 \text{ mangos}$). Josh will give Sarah half of his bananas and Sarah will give Josh half of her mangos. This means they will each get 28 bananas and 28 mangos.
26. D – The allow individuals to consume more than they would be able to on their own.
27. C – Decisions made by individuals and households.
28. D – Market economies let the free market set price.
29. C – They are self-organizing because they don't require government oversight
30. B – Being able to see Phish for less than \$60 is a good deal.
31. B – This statement cannot be verified as true or false because it is an opinion.
32. C – Gather and study data related to the hypothesis the economist is testing.
33. C – Taller males have more confidence and higher self-esteem in the workplace.
34. C – The models can still be used to gain a better understanding of the real world.
35. C – Gains from trade are based on comparative advantage.
36. B – There is an inverse relationship between price and quantity demanded.
37. A – That all other factors are held constant.
38. B – A shortage means that demand is greater than supply. Suppliers will raise price until supply and demand are equal.
39. A – Demand curves have a negative coefficient on P, and supply curves have a positive coefficient on P.

40. D – Set the equations equal to find the equilibrium price. Then plug the equilibrium price back into the supply and demand equations to find the equilibrium quantity.

$$25 - 7P = P + 9$$

$$16 = 8P$$

$$P = 2$$

$$Q_d = 25 - 7(2) = 11$$

$$Q_s = (2) + 9 = 11$$

41. A – Plug the price of \$3 into the supply and demand equations to find the quantity demanded and quantity supplied at this price. You find that the quantity supplied exceeds the quantity demanded by 8 units. When the quantity supplied is greater than the quantity demanded, there will be excess supply, which is referred to as a surplus.

$$Q_d = 25 - 7(3) = 4$$

$$Q_s = 3 + 9 = 12$$

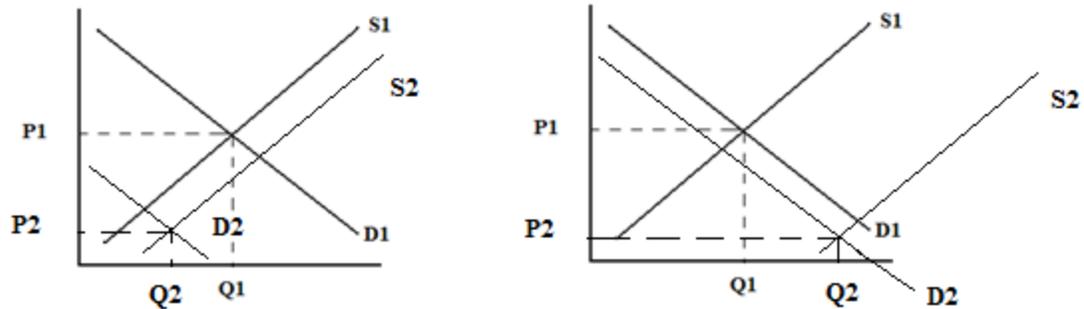
42. C – Plug the price of \$1 into the supply and demand equations to find the quantity demanded and the quantity supplied at this price. You find that the quantity demanded exceeds the quantity supplied by 8 units. When the quantity demanded exceeds the quantity supplied, there will be excess demand, which is referred to as a shortage.

$$Q_d = 25 - 7(1) = 18$$

$$Q_s = 1 + 9 = 10$$

43. A – The fire that wiped the crops would be considered a natural disaster. This would shift the supply curve inward to the left.
44. C – The price of a substitute decreasing will shift demand for Sierra Nevada inward to the left. The improvement in technology will shift Sierra Nevada's supply curve outward to the right.

45. D – Remember to draw two graphs side by side for these problems, as we did in the exam review. You can see that in both graphs the equilibrium price decreases, but we cannot determine the effect on equilibrium quantity.



46. C – This is the point where supply and demand intersect.
47. C – At a price of \$4, the quantity supplied will be 800 units and the quantity demanded will be 400 units. This means supply will exceed demand by 400 units ($800 - 400 = 400$).
48. A – At a price of \$1 the quantity supplied will be 200 units and the quantity demanded will be 1,000 units. This means that demand will exceed supply by 800 units ($1,000 - 200 = 800$). When demand exceeds supply, it is called a shortage.
49. B – If hot dogs become more expensive, people are going to buy fewer hot dog buns because they are complementary goods.
50. C – It is non-excludable because everyone in the country is able to use it and it is non-rivalrous because one person using it does not prevent another person from using it.
51. D – It is excludable because you have to pay for the service; however, it is non-rivalrous because everyone that pays for cable can use it at the same time. My neighbor watching cable does not prevent me from watching cable in my apartment.
52. B – Federal tuition grants lower the price of college. The lower price increases demand for college.
53. D – Capital goods are good that are used to produce consumer goods. Money in a cash register is not considered a capital good.
54. B – Market failure prevents economic efficiency.
55. C – Economists use real world data as opposed to laboratory experiments.
56. C – The use of positive analysis instead of normative analysis because positive analysis uses statements of fact that are value-free.
57. A – Looking out for what is best for you as an individual.
58. B – How consumers think about things is not part of economics; however, studying how consumers behave is part of economics. Economics focuses on what consumers actually do, not what they think.

59. D – The interest rate and the national money supply are macroeconomic issues that affect the economy as a whole.
60. C – Pedestrians affected by traffic congestion from automobiles.
61. B – A positive statement is a statement of fact while a normative statement involves opinion judgment.
62. B – The social costs of an action are higher than the private costs of that action. While the other answer choices could potentially cause a negative externality, they do not have to cause a negative externality. A negative externality has only occurred if answer B is true.
63. C – Incentives
64. A – They prevent the economic efficiency of the price system. Market failures often cause recessions, but market failures do not always occur when there is a recession. Typically when market failures occur it strengthens the justification for government intervention because when the market was left as a free market, it failed. Whenever there is a market failure, people typically argue for more government oversight in the future. We assume individuals always act in their own best interest so the fact that individuals are self-interested does not describe a market failure.
65. C – A tow truck used to repossess cars. Note that money is not an example of capital because it is not a resource used in production. Money can be used to purchase either capital or labor.

Short Answer Solutions

66. To find the equilibrium price and quantity, you need to set $Q_d = Q_s$.

$$400 - 10P = 100 + 20P$$

$$300 = 30P$$

$$P = 10$$

Now you can plug P back into either the Q_d or Q_s equation to find the equilibrium quantity. Since \$10 is the price that makes Q_d and Q_s equal, it doesn't matter which equation you plug \$10 back into. However, a good way to check that you got this problem correct is to plug the value you found for P back into both equations. If both equations give you the same Q , it is very likely you have the correct answer.

$$Q_d = 400 - 10(10) = 300$$

$$Q_s = 100 + 20(10) = 300$$

Will there be a shortage or a surplus if the price of this good is \$7? Will the price of the good rise or fall over time?

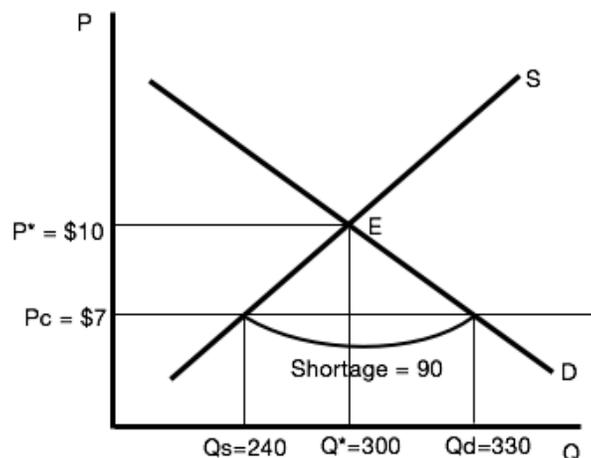
$$Q_d = 400 - 10(P)$$

$$Q_d = 400 - 10(7) = 330$$

$$Q_s = 100 + 20(P)$$

$$Q_s = 100 + 20(7) = 240$$

There is a shortage of 90 units ($330 - 240 = 90$) because Q_d is greater than Q_s . We expect the price of the good to rise over time.

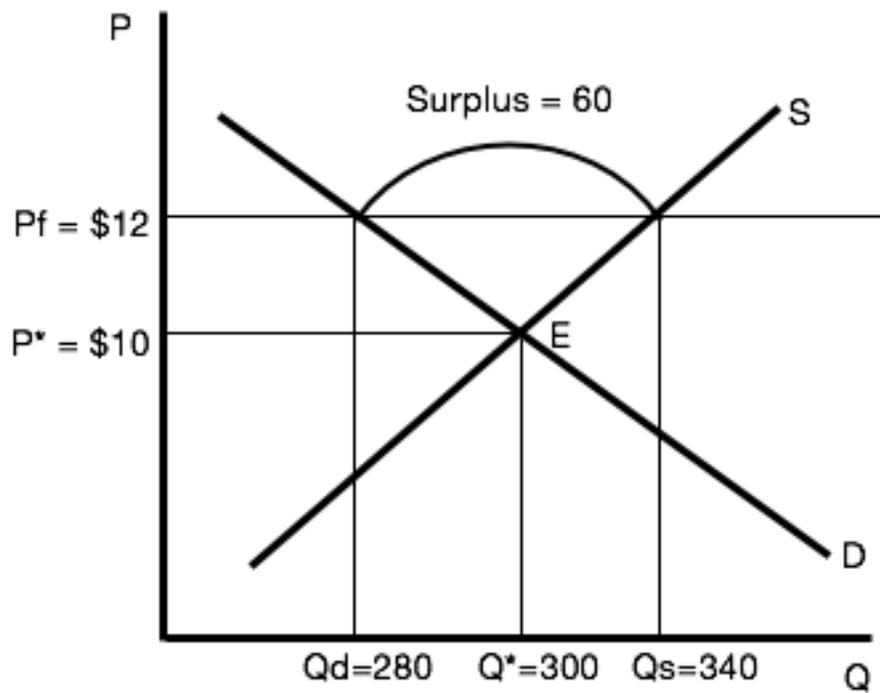


Will there be a shortage or a surplus if the price of this good is \$12? Will the price of the good rise or fall over time?

$$Q_d = 400 - 10(12) = 280$$

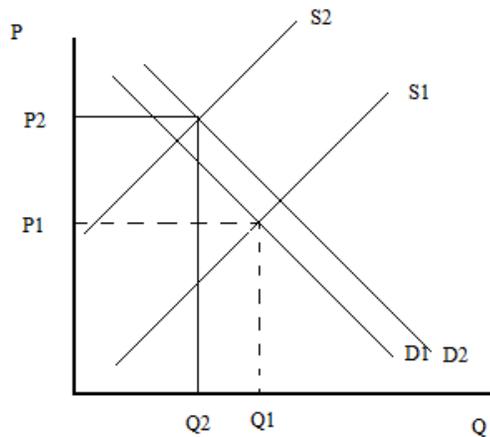
$$Q_s = 100 + 20(12) = 340$$

There is a surplus of 60 units ($340 - 280 = 60$) because Q_s is greater than Q_d . We expect the price of the good to fall over time.

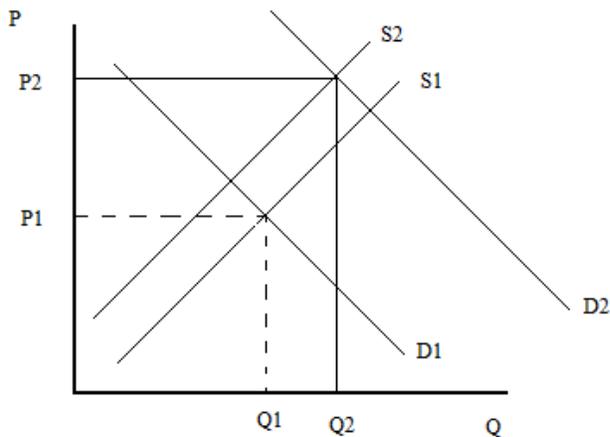


67. Price – Increase; Quantity – Cannot be determined

The trick to solving these problems is drawing two graphs. On the first graph, you shift demand a little bit and supply a lot. When you do this, you can see that Price is increasing while Quantity is decreasing.

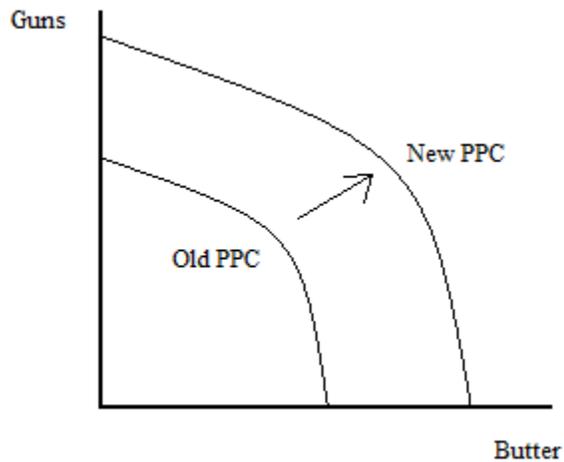


On the second graph, you shift demand a lot and quantity only a little. On this graph, you can see that both price and quantity are increasing.



Since price is increasing on both graphs, you know that price will increase. Since quantity decreases in the first graph and increases in the second graph, quantity cannot be determined based on the information you have been given.

68. The improvement in technology will cause the PPC to shift outward:



69. **Opportunity cost of moving from point C to D = 80 sticks of butter**

Make sure that you read this question carefully. We are moving from point C to point B. This means that we will need to give up 80 sticks of butter to produce 60 more guns. Since we are giving up 80 sticks of butter to move from point C to point B, the opportunity cost of the move is 80 sticks of butter.

Note that if the question had asked what the opportunity cost of moving from point B to point C was, the answer would have been 60 guns because you are giving up making 60 guns to move from B to C. It is important to pay attention to which way you are moving along the PPC.

Inefficient point = Point E

Unattainable point = Point F

70. Jim, because it takes Jim less time to make a sale than Dwight.

71. Jim, because it takes Jim less time to manage an employee than Dwight.

72. Jim must give up 1 sale to manage 1 employee.

Jim's cost in sales of managing employees = Time managing and employee / Time spent making a sale

Jim's cost in sales of managing employees = 15 min / 15 min = 1 sale

73. Jim must give up managing 1 employee to make 1 sale.

Jim's cost in managing employees of sales = Time spent making a sale / Time managing an employee

Jim's cost in managing employees of sales = 15 min / 15 min = 1 employee managed

74. Dwight must give up 2 sales to manage 1 employee.

Dwight's cost in sales of managing = Time managing and employee / Time spent making a sale

Dwight's cost in sales of managing = 60 min / 30 min = 2 sales

75. Dwight must give up managing 0.5 employees to make 1 sale.

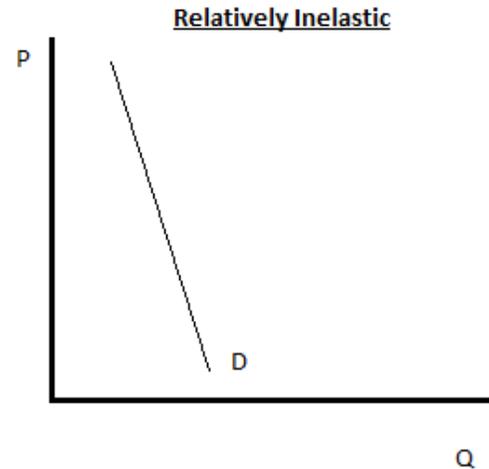
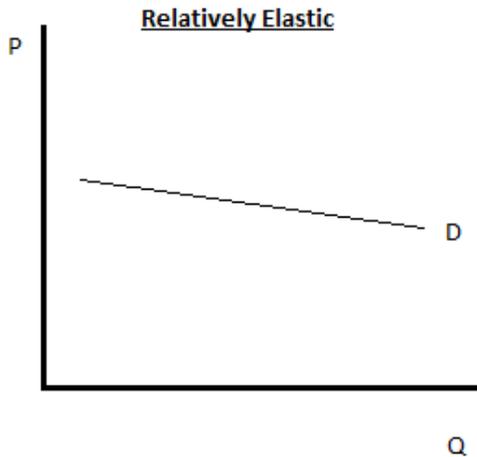
Dwight's cost in managing of sales = Time spent making a sale / Time managing an employee

Jim's cost in managing of sales = 30 min / 60 min = 0.5 employees managed

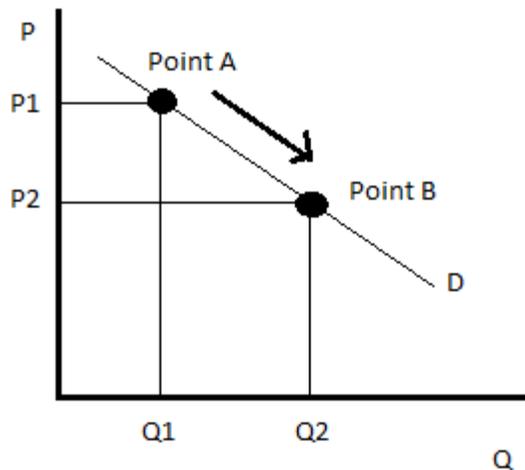
76. Jim, because Jim has to give up 1 sale to manage 1 employee, but Dwight must give up 2 sales to manage 1 employee.

77. Dwight, because Dwight has to give up managing 0.5 employees to make 1 sale, but Jim must give up managing 1 employee to make 1 sale.

78. A relatively elastic demand curve will have a shallow slope because consumers are sensitive to changes in price. A relatively inelastic demand curve will have a steep slope because consumers are not sensitive to changes in price.



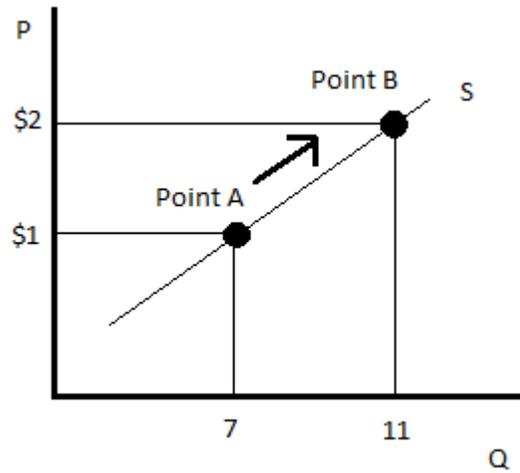
79. The demand curve is downward sloping with quantity on the horizontal axis and price on the vertical axis. A decrease in the good's own price will cause an **increase in quantity demand**. This is reflected by movement downward along the demand curve (not a shift of the demand curve). Make sure that you labeled your points clearly, showed which direction you were moving along the demand curve, and labeled the corresponding price and quantity points on the axes with the notation P1, P2, Q1, and Q2.



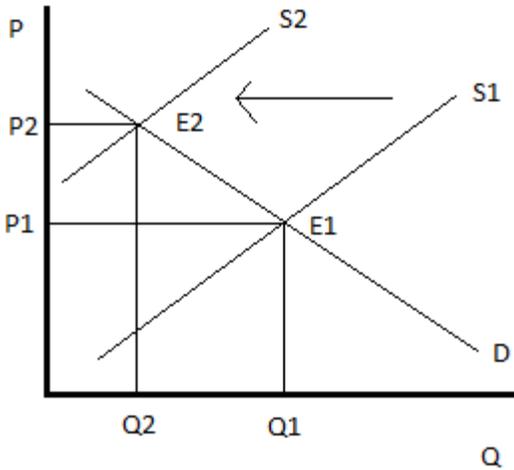
80. The supply curve is upward sloping with quantity on the horizontal axis and price on the vertical axis. An increase in the good's own price will cause an **increase in quantity supplied**. You can use the equation $Q_s = 3 + 4P$ to find the Q_s at a price of \$1 and \$2. Make sure you include an arrow showing which way we are moving along the curve.

$$Q_s = 3 + 4(\$1) = 7$$

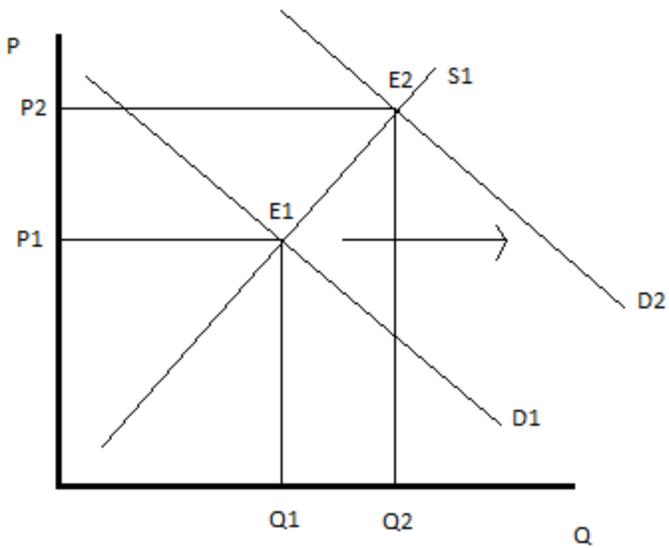
$$Q_s = 3 + 4(\$2) = 11$$



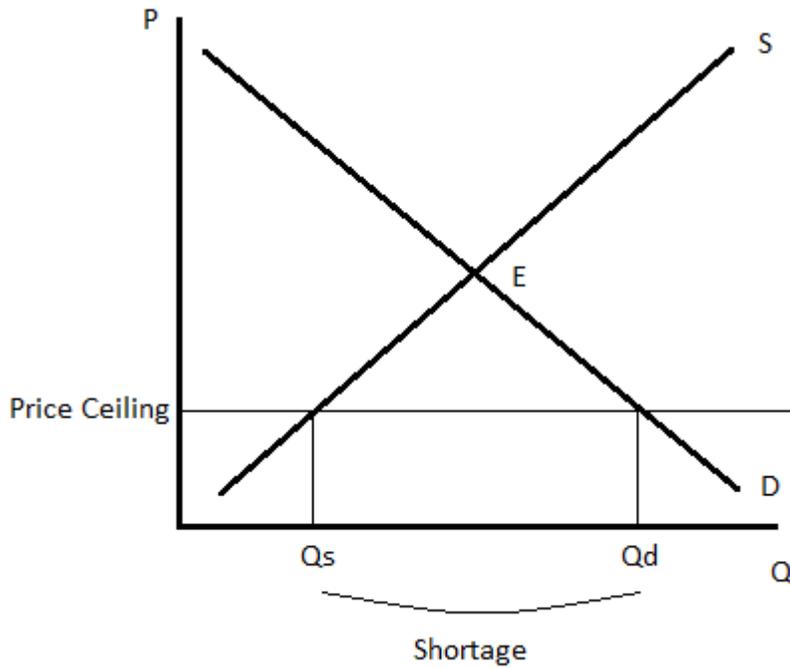
81. A change in the cost of inputs used to make a product will shift the supply curve inward to the left. Make sure to show the shift with an arrow pointing left (not up or down). Shifts of the supply and demand curves are always shown as right or left shifts.



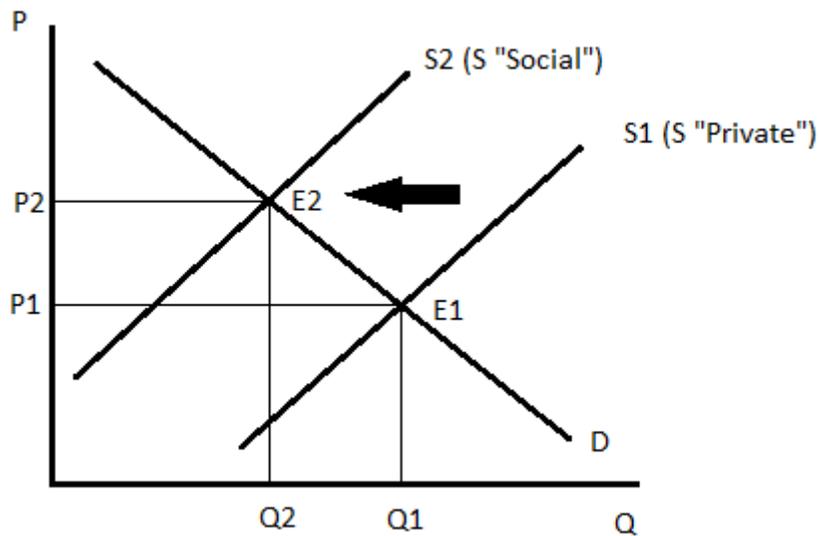
82. An increase in the income level of the general population will cause the demand curve to shift outward to the right.



83. The price ceiling will result in a shortage because the quantity supplied will be less than the quantity demanded.



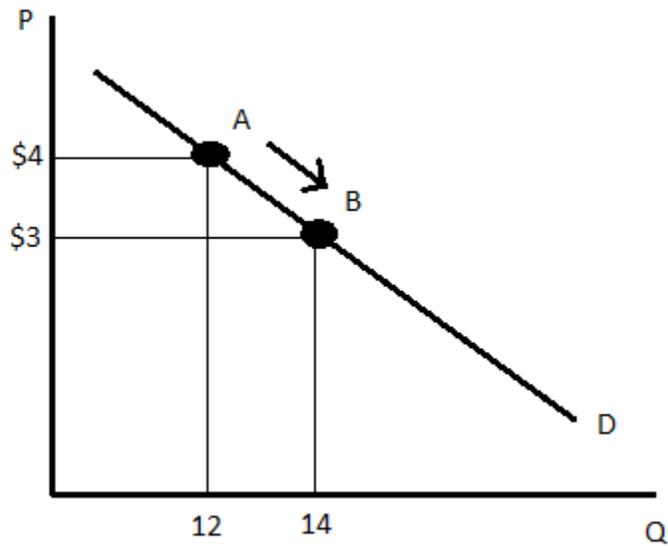
84. When the company has to internalize the externality, its supply curve will shift inward to the left. This will cause the quantity produced to decrease and the price of the good to increase.



85. The demand curve is downward sloping with quantity on the horizontal axis and price on the vertical axis. A decrease in the good's own price will cause an **increase in quantity demanded**. You can use the equation $Q_d = 20 - 2P$ to find the Q_d at a price of \$4 and \$3. Make sure you include an arrow showing which way we are moving along the curve.

$$Q_d = 20 - 2(\$4) = 12$$

$$Q_d = 20 - 2(\$3) = 14$$



86. The first thing to do is solve for the equilibrium price and quantity for last year and then this year.

Last Year

$$Q_s = Q_d$$

$$6 + 2P = 90 - 2P$$

$$4P = 84$$

$$P = 21$$

$$Q_s = 6 + 2(21) = 48$$

$$Q_d = 90 - 2(21) = 48$$

$$P^* = 21, Q^* = 48$$

This Year

$$Q_s = Q_d$$

$$6 + 2P = 138 - 2P$$

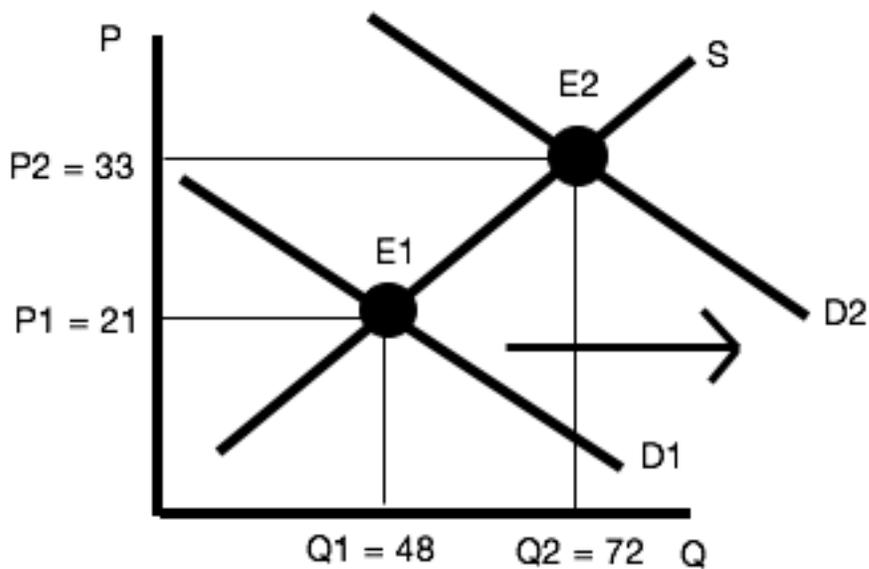
$$4P = 132$$

$$P = 33$$

$$Q_s = 6 + 2(33) = 72$$

$$Q_d = 138 - 2(33) = 72$$

$$P^* = 33, Q^* = 72$$



87. Reasons for rent control: Provides more affordable housing to lower income individuals, and it allows people to find affordable housing in the city so they don't have to commute.

Reasons against rent control: Black markets often appear, apartments are not well maintained, there is a severe shortage of units available, there is no incentive to build new units over time due to low prices.