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ECON 102 Boyle – Exam 1 – Practice Exam Solutions

1. C – The study of how people make choices. Answer B is incorrect because wants are considered to be unlimited.
2. D – Everyone faces scarcity because wants are considered to be unlimited.
3. C – The economy does not affect the way people THINK about interactions. Is it closer related to how individuals actual interact with society.
4. D – We want our economic modeling to be based on verifiable assumptions, not opinionated assumptions
5. B – General price levels is a macroeconomic factor.
6. D – How businesses react to price controls. The rest are macroeconomic factors.
7. B – This is an assumption of bounded rationality which is different than a rule of rational behavior.
8. B – Remember that economists say we cannot define what is considered a need versus a want.
9. D – Economists test their models by examining what has already happened.
10. D – Nothing changes other than the factor or factors being studied.
11. B – The extra cost associated with an extra unit of activity because marginal means extra or incremental.
12. B – Price because it is a factor included in the supply and demand model.
13. D – Scarcity exists because society cannot fulfill all human wants.
14. D – Goods that individuals can use to receive satisfaction. Answer C is incorrect because demand must be greater than supply at a price of zero.
15. A – Humans have unlimited wants. Economists consider needs to be “objectively undefinable.”
16. B – The price of a commodity tells us how much demand there is for the good. If the price is high, the good is in high demand, and if the price is low, the good has low demand. Think about the price of oil. When it is in high demand the price is high and when demand is low the price is low.
17. D – Giving up the experience you would have gained during the internship you would have actually chosen. Opportunity cost is the value of the next-best alternative.
18. C – Resources are fixed during the set period of time.
19. C – The PPC will be bowed if resources are specialized.
20. B – Is an inefficient point.
21. A – When a given level of inputs produce the maximum possible output. Answer choice B should have said “lowest possible cost.”
22. A – Is why the PPC is generally bowed.

23. D – Trade protection; make sure you know the other 3 choices are all factors that will cause economic growth.
24. D – Individuals are able to produce more when they specialize which increases productivity for both individuals and society.
25. A – Answers B and C are definitions of absolute advantage.
26. A – We see specialization occur in society because different individuals experience different costs when engaging in the same activities.
27. A – We can see from the data points that there is a constant tradeoff between each of the levels of production. If you see a question similar to this on the test there is a good chance there will be a constant trade off because it makes the most sense for this type of question to deal with a straight line PPC. Remember that a constant trade off ratio means that we are dealing with a straight line PPC.

To find the tradeoff ratio all we need to do is find the slope of this straight line PPC. We can do this by picking any two points and finding the change in the rise over the change in the run.

$$\text{Slope} = \Delta\text{Rise}/\Delta\text{Run}$$

We can pick any two points from the chart so let's use (0,12) and (2,6). When given a chart like this and given no more information it is safe to assume the first variable given is the variable for the x axis and the second variable is the variable for the y axis.

$$\text{Slope} = (12 - 6)/(0 - 2)$$

$$\text{Slope} = -6/2 = -3/1$$

So our tradeoff ratio is going to be 3:1. This means that we will give up 3 funnels for every set of ping pong balls we make.

28. B – Have an inverse relationship.
29. D – If the relative price of a good decreases consumer will demand more of the good.
30. B – B demonstrates the inverse relationship between price and quantity. Probably best to choose answer choice D after you take your exam.
31. D – Remember that comparative advantage means “lowest opportunity cost”
32. D – Means that there was a change in one of the ceteris paribus conditions. C is incorrect because the fact that a good is a normal good alone does not mean the demand curve would shift. A change in income levels would cause the demand curve to shift.
33. C – Gatorade and Powerade are substitutes.
34. B – Buy more whiskey now. This problem is related to the material on expectations of future prices.
35. A – The only thing that will cause a change in the quantity demanded is a change in the goods own price.
36. C – The increase in the cost of plastic is an increase in the cost of an input for the supplier. An increase in the cost of an input will cause an inward shift of the supply curve.

37. B – Although you may personally disagree, we know Schlitz is an inferior good in this problem because we choose to consume less of it as our income rises.
38. A – Gatorade is a normal good because you will consume less of it as your income goes down.
39. A – To solve this problem we will want to find the point where  $Q_D = Q_S$

$$230 - 5P = 20 + 2P$$

$$210 = 7P$$

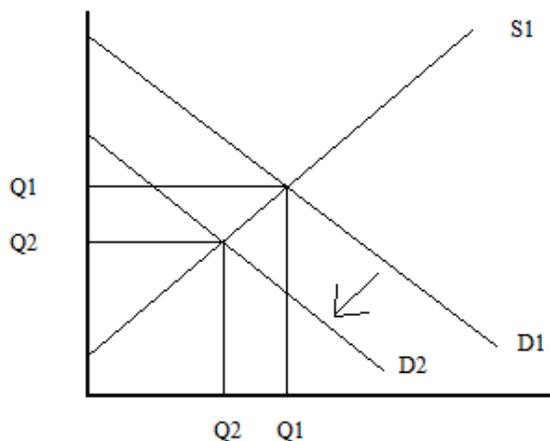
$$P = 30$$

The price of \$30 is the equilibrium price because it is the price where supply and demand are equal. By definition at a price of \$30  $Q_D$  and  $Q_S$  will be equal. So we can plug \$30 into either the  $Q_D$  or the  $Q_S$  equation to find the equilibrium quantity. Additionally if you want to check you did this problem correctly you can plus \$30 into both equations to ensure \$30 is the equilibrium price.

$$Q_D = 230 - 5(30) = 80$$

$$Q_S = 20 + 2(30) = 80$$

40. C – Price is undeterminable, Quantity will increase. See this section in the review packet.
41. D – Movement along the supply curve.
42. C – The point where the supply and demand curves intersect.
43. D – “Other things constant”
44. D – The only thing that would cause both the equilibrium price and quantity to decrease would be for the demand curve to shift inward to the left.



45. C – Unintended consequences are the result of not fully understanding the effect of an incentive
46. C – The purpose of the airline regulation was to make airline travel safer for children; however, the unintended consequence was that families are now driving more instead of flying

47. B – The opportunity cost of their time
48. C – Thinking that association is causation because the third string doesn't cause the team to win. The third string gets to play when the team already has a huge lead and is pretty much guaranteed to win.
49. B – Endogenous
50. C – Goods are mutually exclusive because producing more of one good requires that less of the other good is produced.
51. C – Japan's PPC will expand outward because investing in infrastructure is the same thing as saying they are investing in capital good.
52. D – None of the above because a high unemployment rate results in producing at an inefficient point inside of the PPC; however, it does not cause the PPC to shift or movement along the curve.
53. D – Comparative advantage because your friend be better if he specialized where he had a comparative advantage and then traded with others who had comparative advantages in other areas.
54. D – A shortage of 60 units because at a price of \$50 demand is 80 units while supply is only 20 units.
55. B – The price of the good will rise because excess demand is the same thing as saying there is a shortage.
56. B – When checking out at the grocery store people always choose the line that appears to be the shortest because this is an example of a market acting efficiently when everyone looks out for their own best interest.
57. C – It will cause individuals to make incorrect economic decisions.
58. A – The PPC will shift outward over time because the US will be investing in more capital goods and less consumer goods which will increase economic growth.
59. D – The tax placed on the good that is paid by the seller because this will cause the supply curve to shift, not the demand curve.
60. A – The price of the good will fall as quantity demanded increases and quantity supplied decreases.
61. D – It will not affect the demand curve because a change in the cost of an input will affect the supply.
62. A – Suppliers will tend to discriminate more because the quantity demand will exceed the quantity supplied. Since suppliers are not able to raise price, they will pick who they want to sell their goods to which gives them the option to discriminate against certain groups of people. We see this exemplified with rent control where landlords would discriminate against poor people in favor of wealthy people because wealthy people are more reliable tenants.
63. A – A shortage is caused by a binding price ceiling.
64. C – If the band played bigger venues, it would increase revenue because it could sell more tickets.
65. A – The opportunity cost of finding the good will increase because the price ceiling causes demand for the good to increase; however, it also causes the supply of the good to decrease.

## Short Answer

1. \$2 per hour

Riding your bike will take you 10 hours each way. So riding your bike will take you a total of 20 hours. Taking the bus will take 2.5 hours each way. So taking the bus will take you a total of 5 hours.

Time saved on the bus = 20 hours – 5 hours = 15 hours

Additional cost of bus = \$40 – \$10 = \$30

This means you can spend an additional \$30 to save yourself 15 hours. You now need to divide the cost savings by the number hours you saved to find the rate at which you would need to value your time to make you indifferent between biking or taking the bus.

$\$30 / 15 \text{ hours} = \$2 \text{ per hour}$

This means that if you value your time at \$2 an hour, you are indifferent between biking and taking the bus. If you value your time at more than \$2 an hour, you should take the bus. If you value your time at less than \$2 an hour, you should ride your bike.

2. To find the equilibrium price and quantity you need to  $Q_d = Q_s$ .

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

$$300 = 30P$$

$$P = 10$$

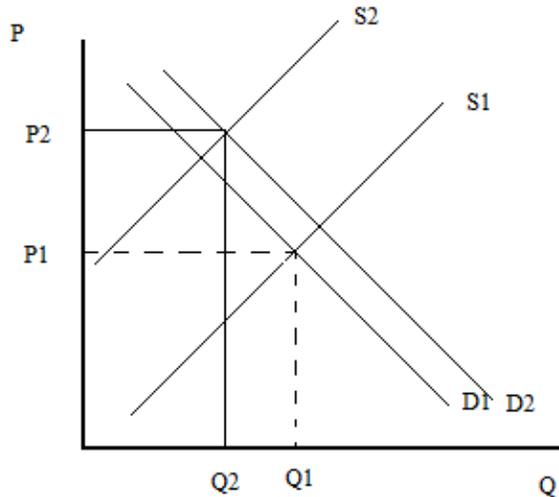
Now you can plug P back into either the  $Q_d$  or  $Q_s$  equation to find the equilibrium quantity. Since \$10 is the price that makes  $Q_d$  and  $Q_s$  equal it doesn't matter which equation you plug \$10 back into. However, a good way to check that you got this problem correct is to plug the value 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.

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

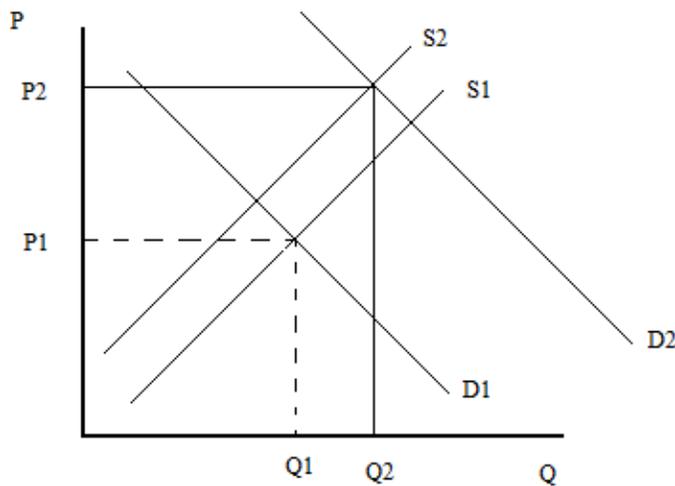
$$Q_s = 100 + 20(10) = 300$$

3. Price – Increase; Quantity – Cannot be determined

The trick to solving these problems is drawing 2 graphs. In the 1<sup>st</sup> 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.



In the 2<sup>nd</sup> graph you will shift demand a lot and quantity only a little. In this graph you can see that both price and quantity are increasing.



Since price is increasing in both graphs you know that price will increase. Since quantity decreases in the first graph and increases in the 2<sup>nd</sup> graph quantity cannot be determined based on the information you have been given.

4. Carl should drink beer and Lenny should meditate

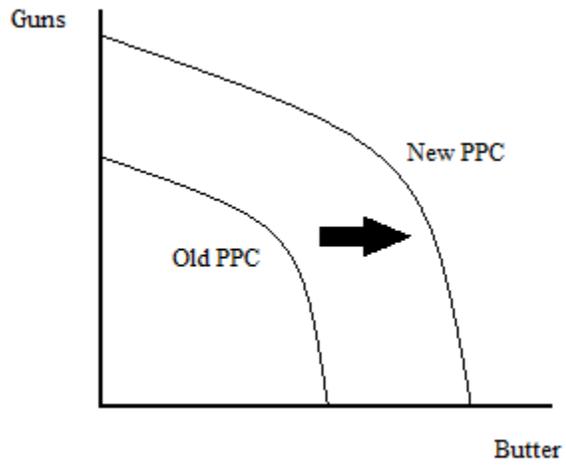
We can see that Carl does have an absolute advantage in both drinking beer and meditating, but remember we decide how to specialize our skills based on comparative advantage not absolute advantage. There are still ways Lenny and Carl can work together to maximize their total production through specialization. Your comparative advantage is where you have the lowest opportunity cost.

We can see that if Lenny were to drink all beer and not meditate he would be able to consume 8 beers. If Lenny only meditated he would be able to meditate 16 times. So we can see that Lenny has a 2:1 tradeoff ( $16 \div 8$ ) between meditating and drinking beer. Every beer Lenny drinks costs him 2 meditations.

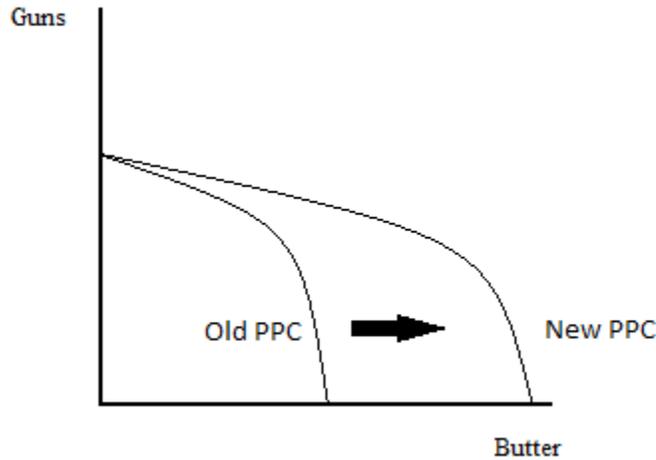
We can see that if Carl were to drink all beer and not meditate he would be able to consume 24 beers. If Carl only meditated he would be able to meditate 24 times. So we can see that Carl has a 1:1 tradeoff between meditating and drinking beer. Every beer Carl drinks on costs him 1 meditation. Thus Carl has the lower opportunity cost of drinking beer since he only has to give up 1 meditation to drink a beer while Lenny has to give up 2 meditations to drink one beer.

Another way to look at this type of problem is to see that Carl can complete 1.5 times the amount of meditations as Lenny, but he can drink 3 times as many beers as Lenny. Thus we can see that Carl has a comparative advantage in drinking beer.

5. The improvement in technology for both guns and butter will cause the PPC to shift outward:



6. In this problem only the technology for producing butter is increasing. When this is the case you will keep the intercept for guns in the same place, but you will shift the intercept for butter outward.



7. **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 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 form 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**

8. **A change in any of these factors will shift the demand curve** – Income, taste and preferences, prices of related goods, consumer’s expectations of future prices and incomes, and the market size

**A change in any of these factors will shift the supply curve** – Prices of resources and inputs used to produce products, technology and productivity, taxes and subsidies, producer’s price expectations, the number of firms in the industry

9. Demand for Gatorade will not be affected. Plastic is an input used to make Gatorade. A change in the cost of an input will shift the supply curve for Gatorade, but it will not affect the demand curve for Gatorade.

10. If Rob picks all mangos, he can pick 40 mangos. If Rob picks all bananas, he can pick 160 bananas. This means that for every mango Rob picks, he is giving up picking 4 bananas ( $160 / 40 = 4$ ). So Rob’s opportunity cost of picking one mango is 4 bananas.

11. See this section in Chapter 1 of the review packet.

12. See this section Chapter 2 of the review packet.

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

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

15. 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**

16. 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**

17. 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**

18. 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**

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

20. 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.

21. 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

$$Q_s = Q_d$$

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

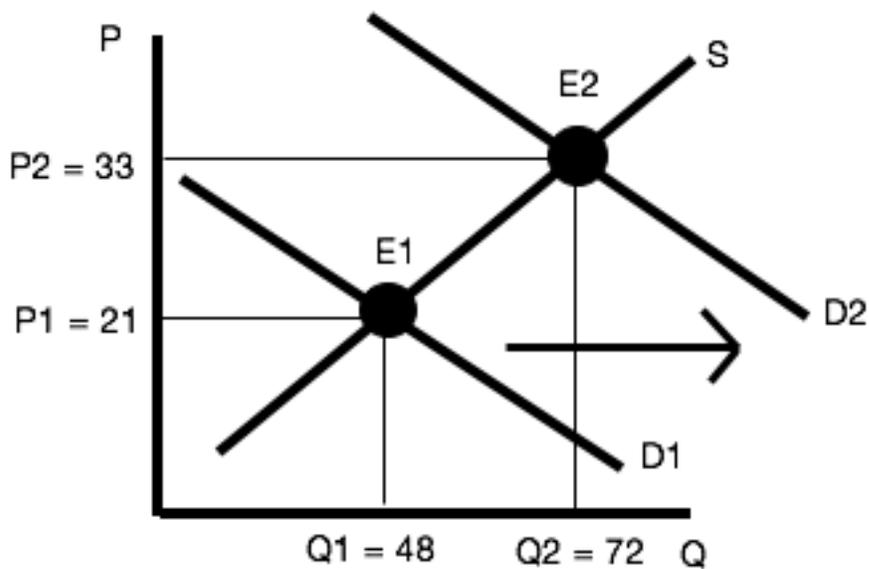
$$4P = 132$$

$$P = 33$$

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

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

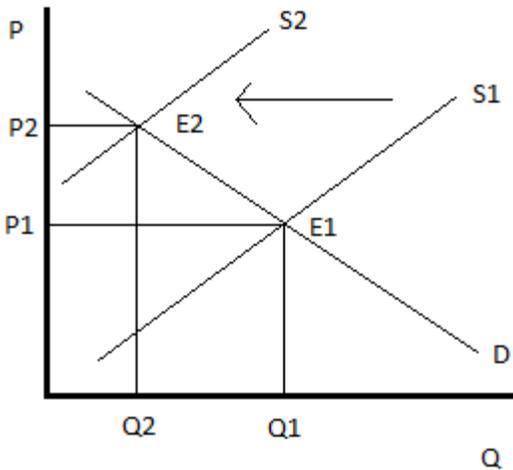
$$P^* = 33, Q^* = 72$$



22. 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.

23. 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.



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

