Homework 17. Hard copy due at the beginning of class on April 14.


Name _____Answer Key_____

(1) Below is a supply and demand curve for a hypothetical good. Plot both curves in the figure below using bold and solid lines, being as careful and meticulous as possible. Then, indicate the market equilibrium price and quantity using dotted lines and denoting the equilibrium price and quantity as P^E and Q^E, respectively. Your equilibrium prices should be a whole number with no decimal places. Your lines and equilibrium points do not have to be perfectly precise, just close enough that you communicate to us that you know how to graph equations and can identify the market equilibrium.
Supply: $P = 2 + 2(Q)$
Demand: $P = 20 – 1(Q)$
Q is quantity per month and P is price per unit of Q
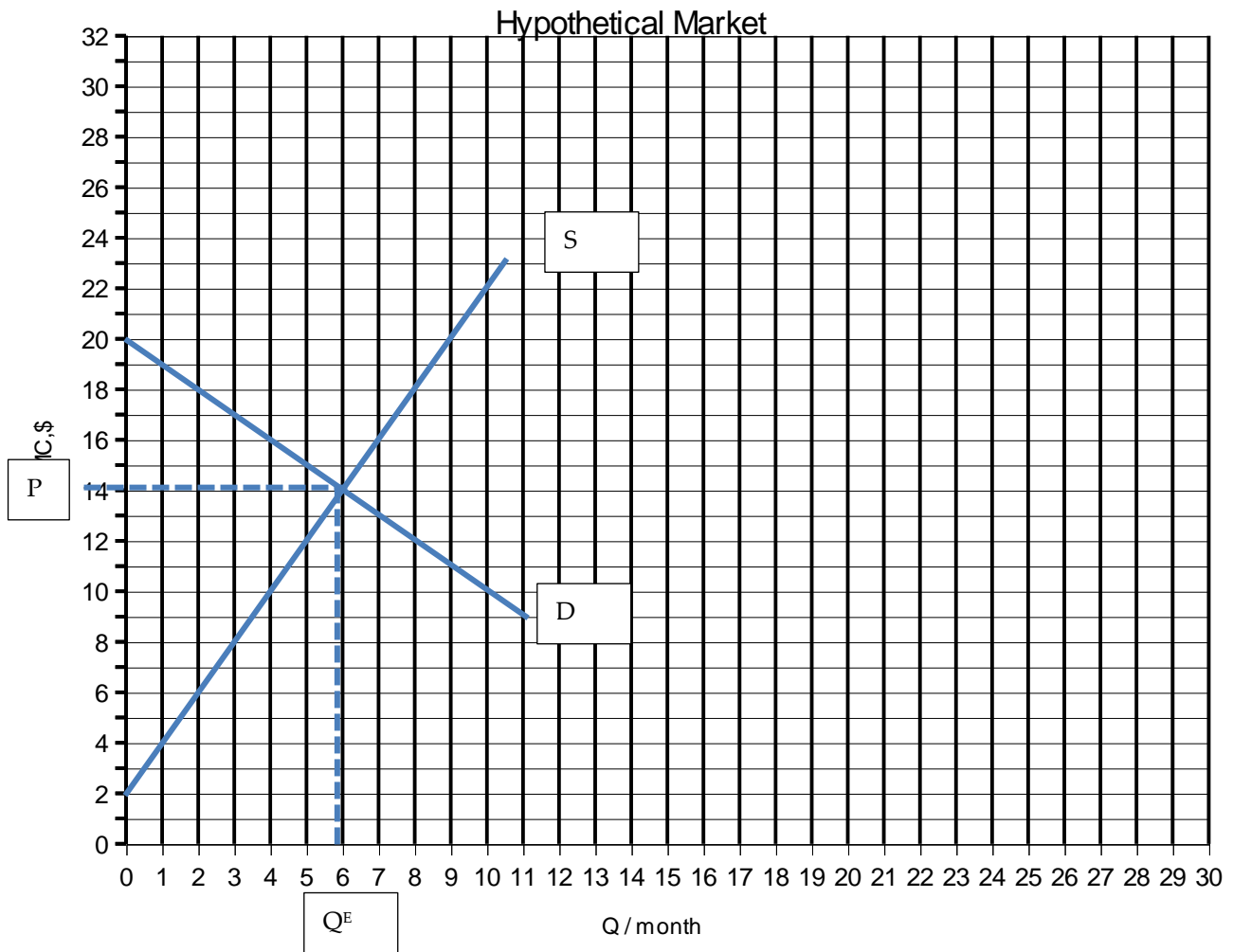
(2) Using the supply and demand curves above, please indicate the precise equilibrium price and quantity. The equilibrium price and quantity should be whole numbers with no decimals.

The equilibrium quantity and price is _____6_____ units and ___14_____ $ per unit.

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(3)

The supply and demand curves for retail pork are...
Supply: MC,P = 90 + 0.000011(Q)
Demand: MV,P = 210 - 0.000012(Q)
where MC,MV,P are expressed in real 1982 dollars per cwt (100 lbs) and Q refers to to cwt of retail pork produced per month.

(3.a) Graph the the supply and demand curves in the figure below. Illustrate the equilibrium price as P^E and the equilibrium quantity as Q^E. Calculate the precise equilibrium price and quantity values using algebra also.

Retail Pork Market
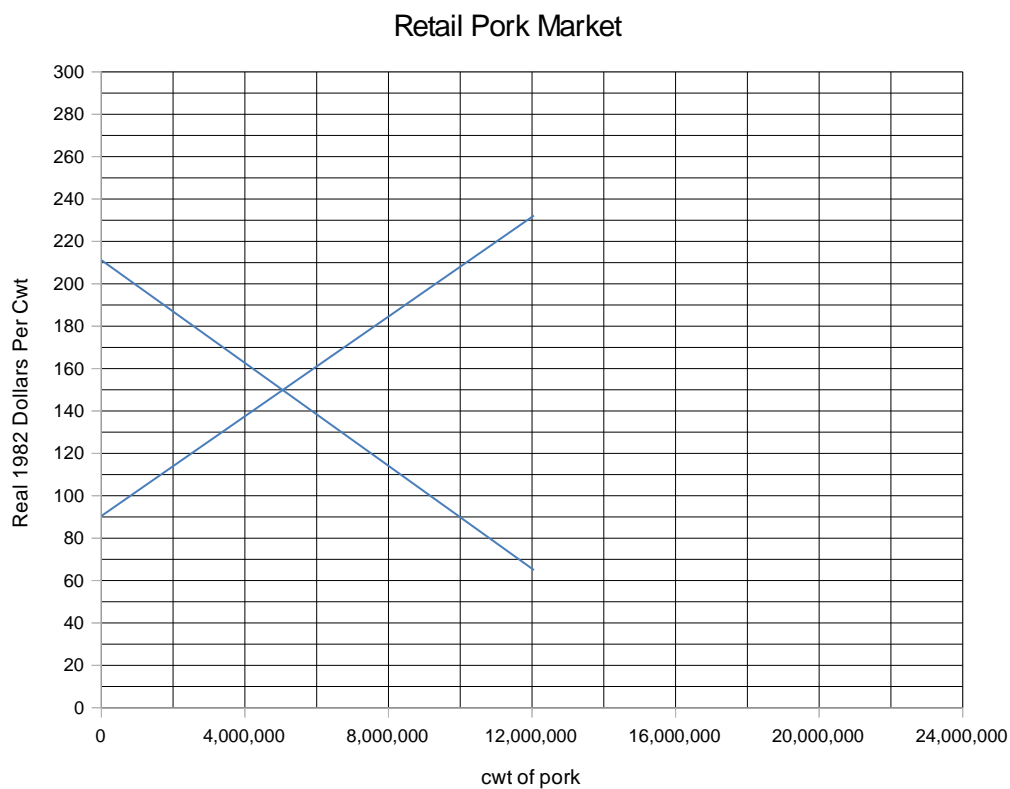
Equilibrium Price = _____147_____   Equilibrium Quantity = _____5,217,391

Q		S	D	
-		90	210	
12,000,000		222	66	

Q

Set Supply = Demand
90 + 0.000011(Q) = 210 - 0.000012(Q)
(0.000011 + 0.000012)Q = 210 – 90
(0.000023)(Q) = 120
Q^E = 120/0.000023 = 5,217,391
P^E = 90 + 0.000012(5,217,391) = 210-
0.000011(5,217,391) = 147

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(3.b) At this equilibrium, if price was $100, instead of the equilibrium price …

quantity supplied would be _____909,091_____ cwt
*Set P = MC,S curve. 100 = 90 + 0.000011(Q), Q = (100-90)/0.000011 = 909,091*

quantity demanded would be _____9,166,667_____ cwt
Set P = MV,D curve. 100 = 210 – 0.000012(Q), Q = (210-100)/0.000012 = 9,166,667

and (circle one) *excess demand* / *excess supply* would be __9,166,667 – 909,091 = 8,257,576_cwt.

As a result we would expect price to (circle one) *rise* / *fall*

(4) Below is a supply curve for cotton. Assume that land can be used to grow cotton, soybeans, or corn, and that farmers tend to plant whatever is most profitable. Suppose that the price of soybeans declines. For many farmers, soybeans were the next most valuable crop, so this event decreases the opportunity cost of raising cotton. In the graph below, depict how this event would alter the shape of the cotton supply curve by drawing a new supply curve labeled S'. Note that there are many, many different correct answers.
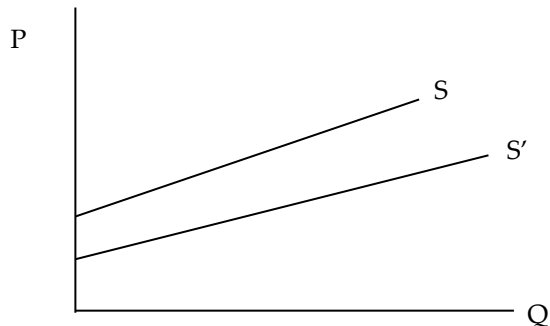
(5) Below is a supply curve for cotton. Suppose that the price of cotton increases. In the graph below, describe in words how this event would alter the shape of the cotton supply curve.

Because the graph shows the relationship between the cotton price and cotton supply, a rise in the price of cotton refers to a movement *along* the supply curve. The supply curve itself would not change.
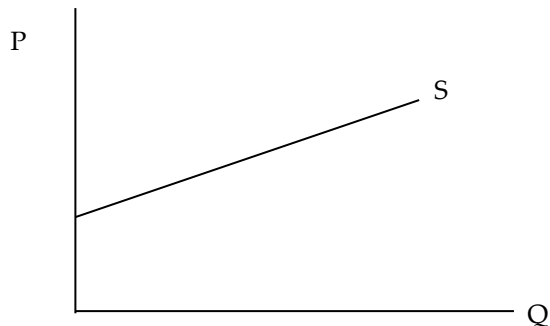
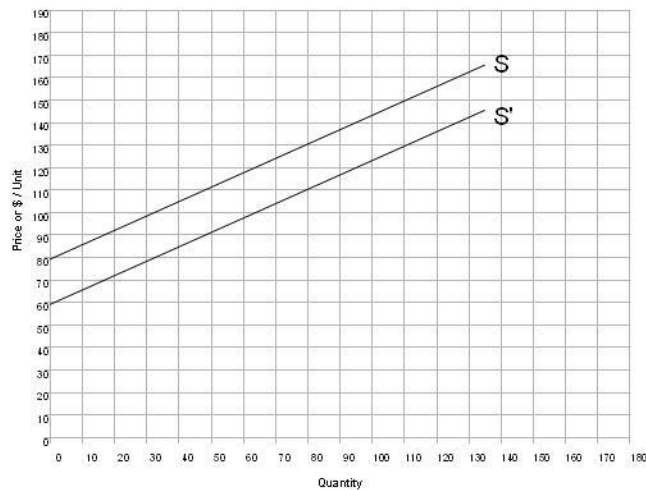Homework 17. Hard copy due at the beginning of class on April 14.

(6) Below is a diagram showing an old supply curve S and a new supply curve S' for corn ethanol. Which of the following statements accurately describes this change? Select the ONE correct answer.

(a) the opportunity cost of producing corn ethanol falls

(c) the marginal value of corn ethanol falls

(b) the opportunity cost of producing corn ethanol rises

(d) the marginal value of corn ethanol rises

(7) Above is a diagram showing an old supply curve S and a new supply curve S' for corn ethanol. Which of the following statements accurately describes this change? Select the ONE correct answer.

(a) the slope of the supply curve falls

(c) the intercept of the supply curve falls

(b) the slope of the supply curve rises

(d) the intercept of the supply curve rises

(8) The supply curve is also a(n) __marginal cost___ cost curve.

(9) Marginal cost is the cost of producing _____one more unit__.