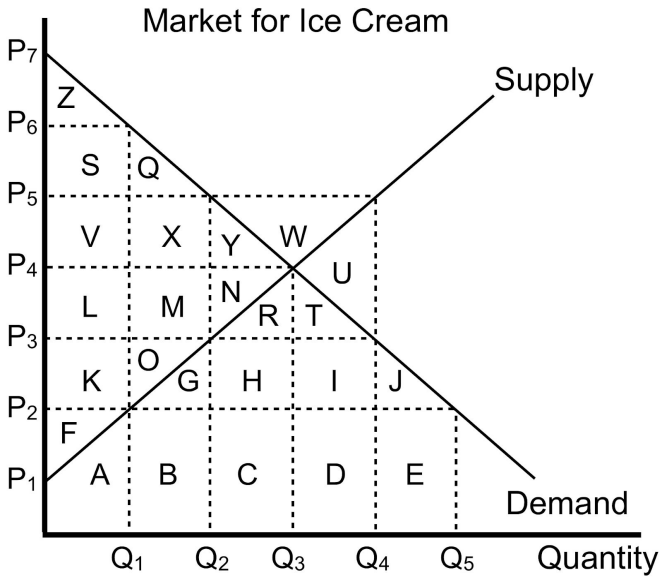
Microeconomics
Unit 2 Practice Sheet

Part 1 - Supply and Demand Practice- *Use the graph for ice cream to answer the questions below.*



1. What is the equilibrium price and quantity?
   P_4 and Q_3
2. Identify a price and quantity that could be the result of an increase in the price of milk, a key resource in the production of ice cream.
   P_5 and Q_2 or P_6 and Q_1
3. Identify a price and quantity that could be the result of a decrease in the price of popsicles, a substitute to ice cream.
   P_3 and Q_2 or P_2 and Q_1
4. Identify the area of consumer surplus at the equilibrium price.
   ZSQVXY
5. Identify the area of consumer surplus if the supply increased resulting in the equilibrium price of P_3 and Q_4.
   ZSQVXYLMNRT
6. Assume instead that the demand decreased resulting in the equilibrium price of P_3 and Q_2. Identify the area of producer surplus.
   FKO
7. Identify the area of consumer surplus if a price ceiling is placed at P_2.
   ZSVLK
8. Identify the area of consumer surplus if a price ceiling is placed at P_5.
   ZSQVXY- This is a trick question. A price ceiling above equilibrium is not binding. It has no effect.
9. Identify the area of deadweight loss if a price floor is placed at P_6.
   QXMOYN
10. Assume that a per-unit tax was placed on ice cream resulting in an equilibrium price of P_6 and Q_1. Identify the area of consumer surplus.
    Z
11. Assume that a per-unit tax was placed on ice cream resulting in an equilibrium price of P_6 and Q_1. Identify the area of deadweight loss.
    QXMOYN
12. Assume that a per-unit tax was placed on ice cream resulting in an equilibrium price of P_6 and Q_1. Identify the area of tax revenue.
    SVLK
13. Assume instead that consumers can get ice cream at the world price of P_2. Identify the area of consumer surplus after international trade.
    ZSQVXYLMNRTKOGHIJ
14. Identify the quantity that will be imported if the world price is P_2. $Q_5 - Q_1$

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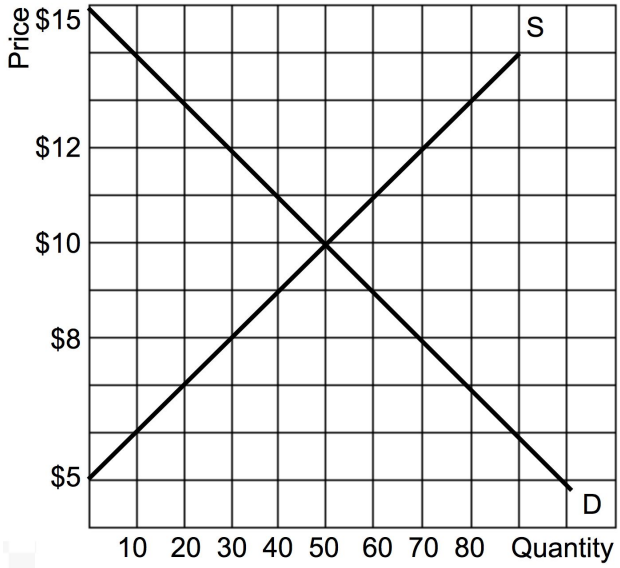
Part 2 - Calculation Practice- *Use the graph for a competitive market to answer the questions below. Show your work.*



15. What is the quantity demanded and quantity supplied at the price of $13?
    QD = 20 units , QS = 80 units
16. Could an increase in supply result in an equilibrium price and quantity of $12 and 30 units? Explain.
    No. An increase in supply would cause the price to decrease and the quantity to increase
17. Calculate the consumer surplus at the equilibrium price. CS = $125 = ($15 - $10) x 50/2
18. Calculate the consumer surplus if a decrease in supply results in an equilibrium price of $12. CS = $45 = ($15 - $12) x 30/2
19. Calculate the producer surplus if an increase in demand results in an equilibrium price of $12.
    PS = $245 = ($12 - $5) x CS = $45 = ($15 - $12) x 30/2
20. Calculate the deadweight loss if a decrease in demand results in an equilibrium price of $8.
    $0. This is a trick question. There is no deadweight loss when a market is at equilibrium
21. Calculate the consumer surplus if a price ceiling is placed at $8.
    CS = $165 = [($15 - $12) x 30/2] + [($12 - $8) x 30]
22. What would be the equilibrium price and quantity if a $2 per-unit tax is placed on the good?
    P = $11, Q = 40
23. How much tax revenue would be generated if a $2 per-unit tax is placed on the good?
    $80 = $2 tax + 40 units
24. Would the incidence of tax from a $2 tax mostly fall on consumers or producers? Explain.
    The incidence of tax would be equally shared between consumers and producers.
25. Calculate the consumer surplus if consumers can get this product at the world price of $7.
    CS = $320 = ($15 - $7) x 80/2
26. Calculate the elasticity of demand coefficient between the price of $10 and $9.
    +20%/-10% = .2/-.1 = -2 The demand in this range is elastic
27. Calculate the elasticity of supply coefficient between the price of $10 and $12.
    +40%/+20% = .4/.2 = 2
28. Assume the price fell from $10 to $8 causing the quantity demanded of a different product to increase from 100 to 120 units. Calculate the cross-price elasticity of demand coefficient.
    +20%/-20% = .2/-.2 = -1 These two products are complements (not substitutes)
29. Assume instead that the demand changes in such a way that a decrease in supply results in an equilibrium price and quantity of $12 and 50 units. Calculate the elasticity of demand coefficient.
    0, The demand would be perfectly inelastic (vertical).

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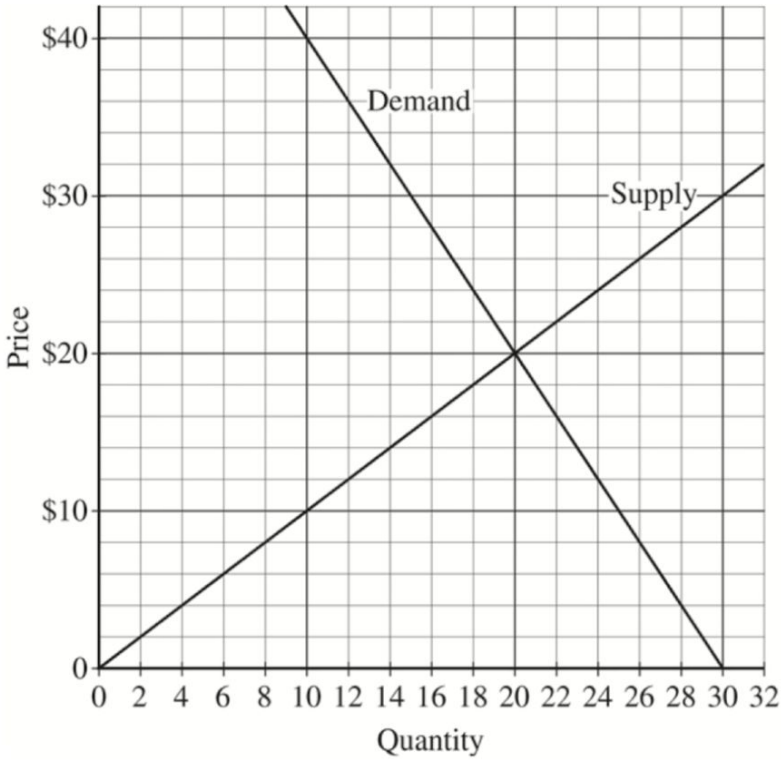
Part 3 - FRQ Practice- Complete the following question from the 2015 AP exam (Question 3).

2015 AP® MICROECONOMICS FREE-RESPONSE QUESTIONS

3. The graph below shows the market for widgets. The government is considering intervening in this market.



(a) Calculate the total producer surplus at the market equilibrium price and quantity. Show your work.

(b) If the government imposes a price floor at $16, is there a shortage, a surplus, or neither? Explain.

(c) If instead the government imposes a price ceiling at $12, is there a shortage, a surplus, or neither? Explain.

(d) If instead the government restricts the market output to 10 units, calculate the deadweight loss. Show your work.

(e) Assume the price decreases from $20 to $12.
   (i) Calculate the price elasticity of demand. Show your work.
   (ii) In this price range, is demand perfectly elastic, relatively elastic, unit elastic, relatively inelastic, or perfectly inelastic?

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Question 3

6 points (1+1+1+1+2)

(a) 1 point:
- One point is earned for calculating the total producer surplus as (1/2 × 20 × 20) = $200.

(b) 1 point:
- One point is earned for stating that imposing a price floor at $16 is ineffective and will not create a surplus or a shortage in the market because it is set below the equilibrium price, or because it is not binding.

(c) 1 point:
- One point is earned for stating that imposing a price ceiling at $12 will create a shortage because quantity demanded is greater than quantity supplied, or because the price ceiling is binding.

(d) 1 point:
- One point is earned for calculating the deadweight loss as $150 and for showing:

  (1/2 × 30 × 10)
  or
  (1/2 × 10 × 10) + (1/2 × 20 × 10)
  or
  $50 + $100

(e) 2 points:
- One point is earned for calculating the price elasticity of demand as [(24−20)/20 / (12−20)/20] = −0.5, or for correctly using the midpoint formula.
- One point is earned for stating that in this price range the demand is relatively inelastic.

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