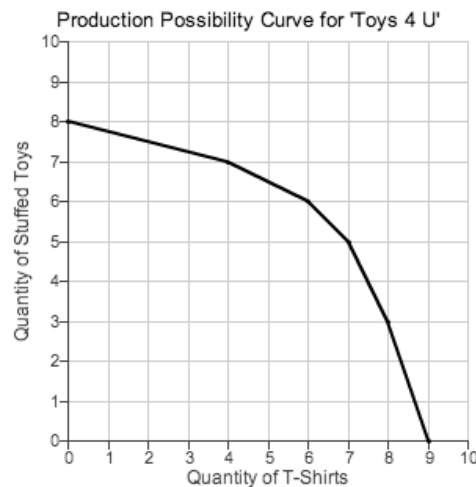


**Pre-Test**

Directions: Use pencil only to answer the following questions. Return your completed pre-test on the first day of class.

READING GRAPHS 1: Refer to the following graph to answer the questions below.



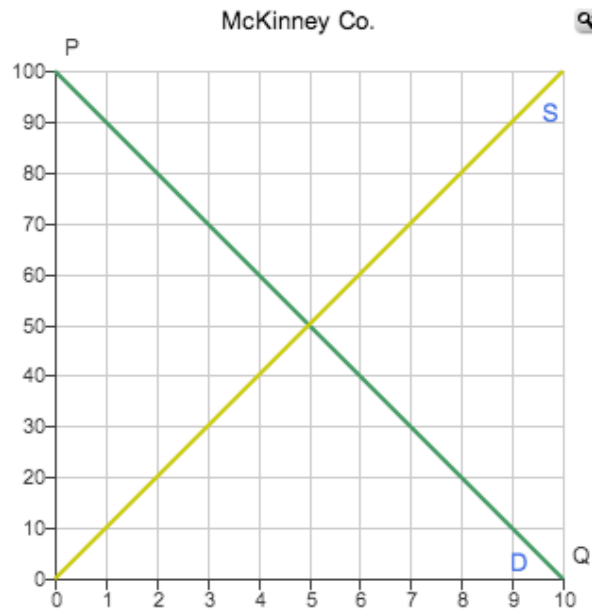
The graph above shows the production capabilities of the firm Toys 4 U. The x-axis indicates how many t-shirts the firm can produce in one day while the y-axis indicates how many stuffed toys the firm can produce in one day. The production curve shown above represents the various combinations of the two goods the firm can produce in a single day. A firm could choose to produce less, but not more.

1. If Toys4U produces 4 t-shirts, how many stuffed toys can they produce?
2. If Toys4U produces 3 stuffed toys, how many t-shirts can they produce?
3. If Toys4U produces 9 t-shirts, how many stuffed toys can they produce?

Determine whether the following statements are true (T) or false (F). Justify your answer.

4. Toys4U can produce 2 t-shirts and 8 stuffed toys in one day.
5. Toys4U can produce 5 t-shirts and 6 stuffed toys in one day.

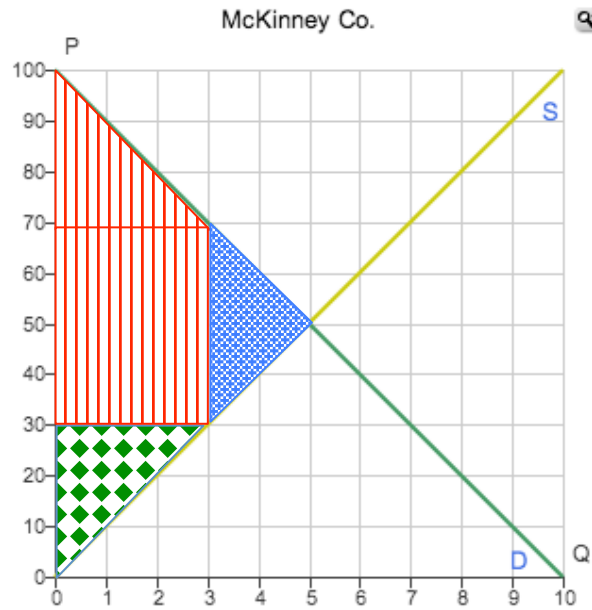
READING GRAPHS 2: Refer to the following graph to answer the questions below.






The graph above shows the demand (D) and supply (S) curves for the firm McKinney Co., a company that produces UNC hoodies. The x-axis shows the quantity of UNC hoodies sold, while the y-axis shows the price. S indicates how many hoodies McKinney Co. is willing to produce at a given price, while D indicates how many hoodies customers are willing to buy at a given price.

6. At a price of \$20, what is the quantity of hoodies demanded?
7. At a price of \$70, what is the quantity of hoodies demanded?
8. T/F: The quantity of UNC hoodies demanded increases as price increases?
9. At a price of \$40, what is the quantity of hoodies demanded?
10. At a price of \$40, what is the quantity of hoodies supplied?
11. When the quantity supplied is less than the quantity demanded, a shortage arises. The shortage is equal to the difference between the quantity demanded and the quantity supplied. At a price of \$40, how large is the shortage?
12. McKinney Co. decides to produce 5 UNC hoodies a day. At what price is the firm willing to sell its product?

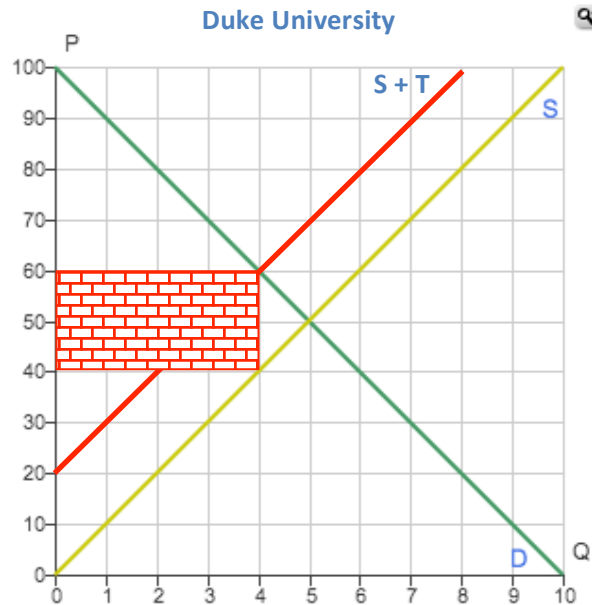
CALCULATING AREA 1: Refer to the following graph to answer the questions below.



The graph above shows the demand (D) and supply (S) curves for the firm McKinney Co., a company that produces UNC hoodies. The  represents consumer surplus while the  represents producer surplus at a price of \$30. The  represents deadweight loss.

13. Calculate the area of the consumer surplus. Show your work in the space below.
  
14. Calculate the area of the producer surplus. Show your work in the space below.
  
15. Calculate the area of the deadweight loss. Show your work in the space below.

CALCULATING AREA 2: Refer to the following graph to answer the questions below.

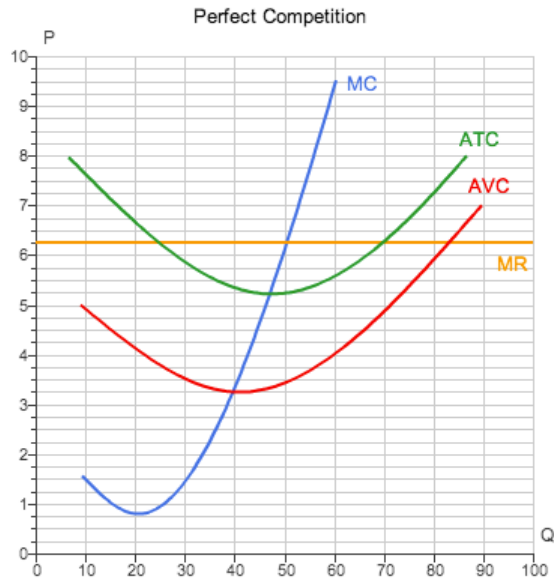


The graph above shows the demand (D) and supply (S) curves for Duke University hoodies. The x-axis shows the quantity of Duke hoodies sold, while the y-axis shows the price. Because Duke sucks, the government has decided to tax Duke every time it produces a Duke hoodie. This per-unit excise tax is represented in the graph above by the curve (S+T).

16. Using the supply curve as a reference, what price will Duke University charge for a hoodie if it chooses to produce 5 hoodies before the tax has been imposed?
17. Using the supply + tax curve as a reference, what price will Duke University charge for a hoodie if it chooses to produce 5 hoodies after the tax has been imposed?
18. What is the value of the per-unit excise tax?
19. The government earns revenue (income) from taxes. The government's total tax revenue is represented by . Calculate the total tax revenue by calculating the area of the rectangle shown in the graph above. Show your work in the space below.



READING GRAPHS 3: Refer to the following graph to answer the question below.



The graph above shows the cost curves and marginal revenue curve for a perfectly competitive firm that produces cotton. The x-axis shows the quantity of cotton sold in bushels, while the y-axis shows the price. MC: marginal cost curve. ATC: average total cost curve. AVC: average variable cost curve. MR: marginal revenue curve.

25. Firms maximize profit when  $MR = MC$ . What is the price and quantity at which this firm will choose to sell its product?
  
26. Assume the firm produces 20 bushels of cotton. Determine the approximate value of each of the following:
 

a) MC	b) MR	c) ATC	d) AVC
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27. Per-unit profit is calculated as the *difference* between marginal revenue and the average total cost. Estimate the per-unit profit earned when the firm sells
 

a) 20 bushels of cotton	b) 50 bushels of cotton
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28. A firm earns an economic profit if  $MR > ATC$ . At which of the following quantities will this firm earn an economic profit? Circle all correct answers.
 

a) 20	b) 30	c) 50	d) 70	e) 80
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USING TABLES 2: Refer to the following table to answer the questions below.

Quantity of Bagels	MU from Bagels	Quantity of Toy Cars	MU from Toy Cars
1	8	1	10
2	7	2	8
3	6	3	6
4	5	4	4
5	4	5	3
6	3	6	2

Theresa consumes both bagels and toy cars. The table above shows Theresa's marginal utility (MU) from bagels and toy cars.

29. Theresa's total utility (TU) is calculated by *summing* the MU. For example, Theresa's TU if she purchases 3 toy cars is  $10 + 8 + 6 = 24$ . Calculate Theresa's TU if she consumes the following quantity of bagels and toy cars. Show your work.

a) 2 bagels

b) 4 toy cars

c) 2 bagels + 4 toy cars

d) 4 bagels + 2 toy cars

30. Theresa's weekly income is \$20, the price of a bagel is \$3, and the price of a toy car is \$2. If Theresa purchases 4 bagels, how many toy cars can she buy? Show your work.

31. Theresa's weekly income is \$11, the price of a bagel is \$2, and the price of a toy car is \$1. The following combinations of bagels and toy cars use her entire weekly income. Which combination will maximize her utility? Show your work.

a) 3 bagels + 5 toy cars

b) 4 bagels + 3 toy cars

c) 5 bagels + 1 toy car