

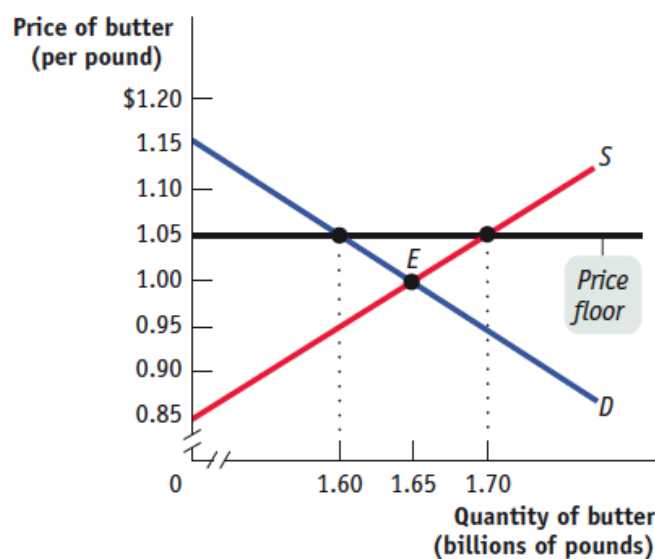
INTRODUCTION TO ECONOMICS
BUSINESS ADMINISTRATION DEGREE - YEAR 2016

PRACTICE SHEET 3B

1. Demand and supply curves of a product are given by the expressions $P_X = 5 - \frac{1}{2}X^D$ and $P_X = 1 + \frac{1}{2}X^S$, respectively.
 - (a) What will be the price and quantity in equilibrium?
 - (b) What is the consumer, producer and total surplus?
 - (c) What is the consumer surplus when the price falls 1 monetary unit (use only the demand curve)?
 - (d) What is the producer surplus when the price rises 1 monetary unit (use only the demand curve)?
2. The accompanying table shows a consumer's willingness to pay and a producer's production cost for each unit of the same good.

Units	Willingness to pay (in \$)	Production cost (in \$)
1st	10	2
2nd	9	4
3rd	8	6
4th	7	7
5th	6	8
6th	5	9
7th	4	10
8th	3	12
9th	2	15

- (a) When the price is \$5, how many units would the consumer buy?
 - (b) What would be her surplus?
 - (c) When the price is \$10, how many units would the producer supply?
 - (d) What would be her surplus?
 - (e) What is the price and quantity in equilibrium?
 - (f) What is producer's total income and consumer's total expenditure?
 - (g) What is the consumer, producer and total surplus in that case?
3. (KWG) The U.S. Department of Agriculture (USDA) administers the price floor for butter, which was set at \$1.05 per pound in 2015. At that price, the quantity of butter supplied was 1.7 billion pounds, and the quantity demanded was 1.6 billion pounds. To support the price of butter at the price floor, the USDA therefore had to buy up 100 million pounds of butter.



- In the absence of a price floor, how much consumer surplus is created? How much producer surplus? What is the total surplus?
- With the price floor at \$1.05 per pound of butter, consumers buy 1.6 billion pounds of butter. How much consumer surplus is created now?
- With the price floor at \$1.05 per pound of butter, producers sell 1.7 billion pounds of butter (some to consumers and some to the USDA). How much producer surplus is created now?
- How much money does the USDA spend on buying up surplus butter?
- Taxes must be collected to pay for the purchases of surplus butter by the USDA. As a result, total surplus (producer plus consumer) is reduced by the amount the USDA spent on buying surplus butter. Using your answers to the questions above, what is the total surplus when there is a price floor? How does this compare to the total surplus without a price floor?