Answer on Question #43240 Economics, Economics of Enterprise

Suppose the following data represent the market demand for college education:
Tuition (per year) $1,000 $2,000 $3,000 $4,000 $5,000 $6,000 $7,000 $8,000
Enrollment demanded 8 7 6 5 4 3 2 1
(In millions per year)
(a) If tuition is set at $3,000, how many students will enroll?
Now suppose that society gets an external benefit of $1,000 for every enrolled student.
(b) Draw the social and market demand curves for this situation on the graph below.
(c) What is the socially optimal level of enrollment at the same tuition price of $3,000?
(d) How large of a subsidy is needed to achieve this optimal outcome?

Solution:

(a) Please find below the table comprising the price and the quantity of students describing the market demand

Table 1

Quantity of students, mln	Costs of tuition (thousands $ per year)
1	8
2	7
3	6
4	5
5	4
6	3
7	2
8	1

Based on this table the equation of demand curve is:

$Q_D = 9 - P / 1$

For the value P = $3,000:

$Q_D = 9 - 3 / 1 = 6$ (mln),

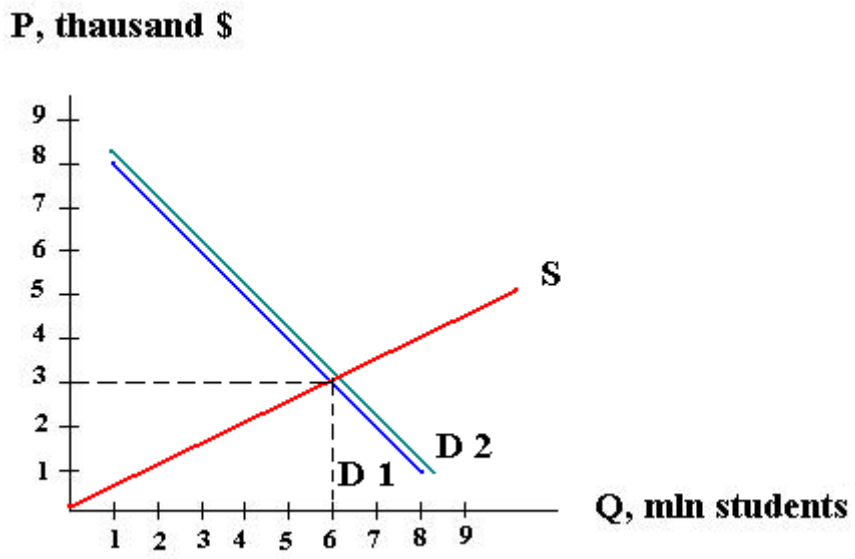
Based on this table the equation of supply curve is:

$Q_S = P * 2$

Answer: 6 millions students

(b) In case when society got an external benefit of $1,000 for every enrolled student we understand that this amount is used by society with different purposes, because for this situation the society is the third part of students-colleagues relationships. We can suppose that this amount is equal to 25% of each of $1,000 for every enrolled student, namely $250. Conceivably the quantity of students who desire to educate and the number of available places are not limited within this situation we suppose that the quantity of students, ready to educate will increase proportionally the increasing of the families income, received from subsides. Consequently we can affirm that the first demand curve (before external benefit) and the second one (after receiving of external benefit) will be parallel. The second demand curve will be placed more right and higher than the first one on the sum equal to the amount of subside. Please see the graph blow.

Answer:



(c) Solution:

For the new demand curve the following equation is right:

$Q_{D2} = 9.25 - P / 1$

At price $3000:

$Q_{D2} = 9.25 - 3 / 1 = 6.25$ (mln)

Answer: 6.25 mln student

(d) Solution:

6,250,000 * $ 3,000 = $ 18,750,000,000

Answer: The size of subside is to be 18.75 billion $