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1.9.

a. If we will calculate the benefit per each row, then we get the following table

Hours	Benefits
0	0
1	10
2	13
3	12
4	5

Thus, we should study for 2 hours, because it gives the biggest benefits.

b. We can define the optimal number of hours by comparing the marginal benefits and costs. When the student will study for 3 hours, we can see, that marginal costs became more than marginal benefits, thus we should choose 2 hours, because the maximum point was passed.

An additional subquestion can be that if you draw the total benefit and the total cost curve, what in mathematical terms are be the marginal benefits and the marginal cost curve.

So, I think in mathematical terms they will be the derivative of each function at each point.

3.4

The case when the Pascal has one day for studying.

Due to note at the bottom of the task, to pass the course all subjects must be more than 50. Because calculus currently less than 50 and it becomes 50 after one day of studying, the strategy is to study calculus at the first day.

The case when the Pascal has two days for studying.

The Pascal take the calculus and the takes economics, because it increases the total sum of grades by 5, which is the biggest among the others.

The case when the Pascal has three days for studying.

So, obviously, the Pascal should spend at least one day to learn calculus. Now, he has 2 days that he should allocate. The biggest amount of grades points gives the strategy when

he allocates all days to calculus. It will give growth in 15 points, it is bigger than any other strategies.

3.5

3.7

a. Total net benefit for the given table

Type of car	Net benefit
Public transport	0
Petrol	5
Diesel	4
Gas	6
Hybrid	5
Electric	4
Hydrogen	2

b. So, he should take Gas because it gives the best total value.

c.

Type of car	Marginal benefit	Marginal cost
Public transport	0	0
Petrol	15	10
Diesel	1	2
Gas	2	0
Hybrid	12	13
Electric	10	11
Hydrogen	20	22

d. We can see, that the margins stop changing nearby gas. That's why we should take gas.

4.14

$$a. 70 - 4p = 10 + 2p$$

$$60 = 6p$$

$$p = 10$$

The answer is price equilibrium equals to 10.

$$b. 100 - 4p = 10 + 2p$$

$$90 = 6p$$

$$p = 15$$

The answer is price equilibrium equals to 15.

Solution of the general case.

$$a + bp = c + dp$$

$$p = \frac{c - a}{b - d}$$