	11	11	30	30	CD
	10	10	10	1	ABC
	12	12	2	12	ABD
	14	3	14	14	ACD
	4	16	16	16	BCD
	0	0	0	0	ABCD

Add 11 to all the table values to get rid of the negative values and get the smallest value of zero, then multiply all the table values by 2 to get rid of the fractional values

A   7+11=18*2=36

-4+11=7*2=14

BC   -6.5+11+4=4.5*2=9

ABC   -10.5+11=0.5*2=1

We choose the smallest negative value from the utility table and add an amount to it to make it zero

If the table contains fractional numbers

So we multiply by *2 to get rid of fraction

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Example: Assume that the company will sell unsold milk at a discount of 30 dinars. What is required is to create an utility table and standard utility table

Solution:

	Q_1	Q_2	Q_3	
d_1	40−30=10	−80	−80	A
d_2	−40−30= −70	20	−70	B
d_3	−60	−60	30	C
d_4	−30	−30	−120	AB
d_5	−20	−110	−20	AC
d_6	−100	−10	−10	BC
d_7	−60	−60	−90	ABC

 To form the standard utility table, we take the value and -120 and divide it by the number 10, so the result is -12

That is, we add the number 12 to all the values of the table above after dividing them by the number 10

That is, the standard benefit schedule will be as follows:

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	Q_1	Q_2	Q_3	
d_1	13	4	4	A
d_2	5	6	5	B
d_3	6	14	15	C
d_4	9	9	0	AB
d_5	10	1	10	AC
d_6	2	11	13	BC
d_7	6	6	3	ABC

$-120/10=-12+12=0$

$-70/10=-7+12=5$

$-60/10=-6+12=6$

$-30/10=3+12=15$

Example 1: The following table represents the standard benefit table:

	Q1	Q2	Q3	Q4
d1	16	14	36	18
d2	20	22	12	24
d3	12	18	10	12
d4	10	24	16	6

Required: Extract the utility table

Solution :

The maximum value in the table =36

So we subtract the value from all 36 elements of the table and then multiply the result *2 to get the following table which represents the utility table

16-36=-20*2=-40

20-36=-16*2=-32

	Q1	Q2	Q3	Q4
d1	-40	-44	0	-36
d2	-32	-28	-48	-24
d3	-48	-36	-52	-48
d4	-52	-24	-40	-60

Example: A travel and tourism company announces a leisure trip. The cost of the trip per person is $100.Per person for three days.

This company has some offers, including:

If it rains on one of the three days, the trip will be free of charge, and there is also the possibility of protecting the company from...

The problem of rain is through insurance in one of the insurance companies, which is called rain insurance, knowing that

The insurance cost is $65 per person.

The goal of this insurance is for the travel and tourism company to obtain an amount of $105 from the insurance company

rain fall.

Suppose that, for tax considerations, the travel and tourism company cannot receive an amount higher than $50 and that it

I suffered a loss of $30.

Required: Construct a table of value, utility, and standard utility

the solution:

No rain, cost $100 per person

Solution:

No rain, cost $100 per person

Rainfall $0 Cost per person

If it rains, the travel company gets $105

Normal conditions are: 1- Raining or bad weather Q1

2- No rain or good weather Q2

Decisions are

1- Travel and tourism company insurance d1

2- The company does not provide insurance d2

The value table will be as follows:

	Raining or bad weather Q1	No rain or good weather Q2
Insurance d1	105-65=40	100-35=35
The company does not provide insurance d2	100-100=0	100-0=100

The value table is:-

When it rains, the cost per person is zero, but the insurance cost to be paid is 65 $, and the company will receive an amount of 105$ from the insurance company-the company's profit. The result is equal to 40$

When it does not rain, the cost per person will be 100-65(Insurance cost)=35$

The company suffered a loss of an amount, 30$ so from the value table, it is subtracted 30$ from the cost of the table values, so the benefit table becomes as follows:-

	Raining or bad weather Q1	No rain or good weather Q2
Insurance d1	40-30=10	35-30=5
The company does not provide insurance d2	0-30=-30	100-30=70

Taking tax considerations into consideration, the highest profit earned by the travel and tourism company is equal to 50$

The utility table becomes as follows