Let's assume you're baking cookies for a party you're going to do tomorrow. Plans are:

40 cookies per batch.

5 batch per hour (200 cookies).

Schedules: In five hours we will make a total of 1,000 cookies.

The estimated cost for each cookie is € 0.05 -

The total budget of € 50.00 for the ingredients of the biscuits, or € 10.00 per hour.

At the end of the first hour we would have the following progress:

There have been 150 edible cookies (some were burned and we had to throw them). The current cost of the ingredients used so far is € 9.00.

1) **Complete the following table for the results in the first hour (put the units ordered in Euros).**

Budgeted Value - PRE	10 €
Value Achieved - CON	7,5 €
Current Value - ACT	9 €
Cost Variance - VC	- 1,5 €
Variance of Time - VP	- 2,5 €
Efficiency Index Term - IEP	0,75
Cost Efficiency Index - IEC	0,83

Budget (cost) in the first hour value is:
200 biscuits / h x 0.05 cost / cookie → 10 euros.

Achieved value (cost) in the first hour are:
150 biscuits / h x 0.05 cost / cookie →7.50 euros.

Present value (cost) in the first hour are:
9 euros (reflected in the statement)

Cost variance in the first hour is:
VC = CON - ACT 7.50 to 9 = -1.5
Results in a negative cost variance, the budget is exceeded in 1.50 euros.

Variance within the first hour is:
VP = CON - PRE 7.50 to 10 = -2.5
Results in a negative variance term, the project is delayed depending on the budgeted time.

Term Efficiency Index in the first hour is:

IEP = CON / PRE 7.50 / 10 = 0.75

Results in a value less than 1, it is covering 75% of the estimation of the initial term, i.e. it is delaying the deadline.

Cost Efficiency Index in the first hour is:

IEC = CON / ACT 7.50 / 9 = 0.83

Gives a value close to 1, but not enough. The cost was exceeded by around 17% depending on the provisions of the 1st hour.

2) **Point out if the cost to make 1000 cookies would be higher than the initially planned and why.**

According to the indicated in the Cost Variance (CV) in the first hour we exceeded 1.50 euros on the initial budget, i.e. we spend more than we had planned to spend on the 1st hour. The cost Efficiency Index (IEC) has given us a value of 0.833 in the first hour. The value is less than 1 and it indicates that something is wrong. And that means that the cost has exceeded 17% on the predicted.

All portends that make 1000 biscuits will take more than five hours long and it will exceed the 50.0€ expected.

EAC = ACT + ((BAC-CON)/IEC)

EAC= 45 + ((50 - 37,5) / 0,83) 60,06 Euros

The cost estimated after project completion is 60.06 euros, 10.06 euros more than we had originally planned. Therefore it will cost us more to produce the 1000 cookies.

3) Indicate going to take much to make a thousand cookies and why.

The result obtained by the Variance of Time (VP) in the first hour showed us a situation of delay of the project, obtaining a negative (-2.5 euros). The Efficiency Index Term (IEP) has given us, during the first hour, a value of 0.75, indicating that we were covering 75% of the initial term, which is a delay of a 25% in the 1st hour. As in the previous case everything portends that for making the 1000 biscuits it will take more than five hours.