There are two types of problems solvable by partial sum.

1.Problems which you are asked to answer some queries about the sum of a part of elements (without modify queries).

Solution of all of this problems are the same. You just need to know how to solve one of them.

Example : You are asked some queries on an array *a*1, *a*2, ...*a*, *n*. Each query give you numbers *l* and *r* and you should print *al* + *al*+ 1 + ... + *ar* .

Solution : You need to build another array *s*1, *s*2, ..., *sn* which *si* = *a*1 + *a*2 + ... + *ai* and answer is *sr* - *sl*- 1 .

2.Problems which you are asked to perform some queries asking you to modify a part of elements (without printing queries.)

Solution of all of this problems are the same. You just need to know how to solve one of them.

Example : You need to perform some queries on an array *a*1, *a*2, ...*a*, *n*. Each query give you numbers *l*, *r* and *v* and for each *i* such that *l* ≤ *i* ≤ *r* you should increase *ai* by *v*, and then after performing all queries, you should print the whole array.

Solution : You should have another array *p*1, *p*2, ..., *pn* which, all of its members are initially 0, for each query, you should increase *pl* by *v*and decrease *pr*+ 1 by *v* .

An then, for each *i*, starting from 1 you should increase *pi* by *pi*- 1. So, final array would be *a*1 + *p*1, *a*2 + *p*2, ..., *an* + *pn* .