



24^{ος} ΠΑΝΕΛΛΗΝΙΟΣ ΔΙΑΓΩΝΙΣΜΟΣ ΠΛΗΡΟΦΟΡΙΚΗΣ

ΑΠΑΝΤΗΣΕΙΣ Β΄ ΦΑΣΗΣ ΓΥΜΝΑΣΙΟΥ

Τελεστικοί Ενισχυτές (αθροιστές)

C ++

ΚΩΣΤΟΠΑΝΑΓΙΩΤΗΣ ΠΑΝΑΓΙΩΤΗΣ (1^ο Γυμνάσιο Πεύκης)

```
/* NAME: PANAGIOTIS KOSTOPANAGIOTIS
 * TASK: OPERATORS
 * LANG: C++
 */
#include <cstdio>
#include <vector>
#include <cmath>
int main()
{
    freopen("operators.in","r",stdin);
    freopen("operators.out","w",stdout);
    long N,current=0,num[2],min=1000000001;
    scanf("%d\n",&N);
    std::vector<long> neg;
    for(int i=0; scanf("%d",&current) != EOF && i<N; ++i) {
        if(current>0 && !i) {
            num[0]=current;
            scanf("%d",&num[1]);
            break;
        }
        if(current<0)
            neg.push_back(current);
        while (current>0 && neg.size()) {
```

Σελίδα 1 από 10





```
if(fabs(neg.back()+current)<min) {
    num[0]=neg.back();
    num[1]=current;
    min=fabs(num[0]+num[1]);
}
if(fabs(neg.back())>current)
    break;
neg.pop_back();
}
if(neg.size()==0 || num[0]+num[1]==0)
    break;
}
if(neg.size()==N) {
    for(int i=0; i<2; ++i) {
        num[1-i]=neg.back();
        neg.pop_back();
    }
}
printf("%d %d\n", num[0],num[1]);
return 0;
}
```





C

ΑΓΙΑΝΝΗΣ ΚΩΝΣΤΑΝΤΙΝΟΣ (10^ο Γυμνάσιο Λάρισας)

```
/* NAME: KONSTADINOS AGIANIS
 * TASK: OPERATORS
 * LANG: C
 */
#include <stdio.h>
#include <stdlib.h>
unsigned long int n,n1,n_base,n_try,up_timh_n_try,up_timh_n_base,*pinakas;
int main(void)
{
//-----
FILE * in = fopen ("operators.in", "r");
FILE * out = fopen ("operators.out", "w");
fscanf (in , "%ld/n", &n);
//-----

pinakas = (unsigned long int *) malloc(n * 4);

long int up_timh1,up_timh;

n--;
n1=0;
//-----
fscanf(in,"%ld",&pinakas[0]);
n1++;
read: //for (n1++;n1<=n;n1++)
fscanf(in," %ld",&pinakas[n1]); //{
n1++; //fscanf(in," %ld",&pinakas[n1]);
if(n1<=n) //}
goto read;
```

Σελίδα 3 από 10





```
//-----  
  
n_try=n;  
n_base=0;  
//-----  
up_timh=2147483647;  
//-----  
//-----  
//-----  
  
loop:  
  
    n1=up_timh1=pinakas[n_base] + pinakas[n_try];  
  
    if(up_timh1 < 0)  
        n1=up_timh1*=-1;  
  
    if(up_timh1 < up_timh)  
    {  
        up_timh=up_timh1;  
        up_timh_n_try=n_try;  
        up_timh_n_base=n_base;  
    }  
  
main_loop: //-----  
  
    n_try--;  
  
    if (n_base == n_try)  
        goto print;
```





```
up_timh1=pinakas[n_base] + pinakas[n_try];

if(up_timh1 < 0)
up_timh1*=-1;

//-----

if (up_timh1 < n1)
{

    if(up_timh1 < up_timh)
    {
        up_timh=up_timh1;
        up_timh_n_try=n_try;
        up_timh_n_base=n_base;
    }

    n1 = up_timh1;
    goto main_loop;
}

next_base: //-----

    n_base++;
    n_try++;

if (up_timh == 0)
```

Σελίδα 5 από 10





```
goto print;

goto loop;

//-----
//-----
//-----

print:

fprintf(out,"%ld %ld\n",pinakas[up_timh_n_base],pinakas[up_timh_n_try]);

//-----

end:
fclose(in); fclose(out);
return 0;
}
```





PASCAL

ΚΟΥΛΑΣ ΙΑΣΩΝΑΣ (Κολέγιο Ψυχικού)

(* NAME: KOULAS IASONAS

* TASK: OPERATORS

* LANG: PASCAL

*)

program pdp;

var

input,output: text;

c,thet,arn: array [1..1000000] of longint;

i,s,j,l,min,a,temp,ar1,ar2:longint;

counter,counter1,k,b:integer;

begin

assign(input,'operators.in');

reset(input);

readln(input,a);

assign(output,'operators.out');

rewrite(output);

for i:=1 to a do

begin

read(input,s);

if s<0 then

begin

counter:=counter+1;

arn[counter]:=s;

end

else

begin

Σελίδα 7 από 10



```
    counter1:=counter1+1;
    thet[counter1]:=s;
end;
end;

if counter1=0 then
begin
write(output,arn[counter-1],',',arn[counter]);
end
else
if counter=0 then
begin
write(output,thet[1],',',thet[2]);
end
else
begin

i:=1; j:=counter; k:=1;
while (i<=counter1) and (j>=1) do
if (thet[i]<abs(arn[j])) then
begin
c[k]:=thet[i];k:=k+1;i:=i+1;
end
else
begin
c[k]:=arn[j]; k:=k+1; j:=j-1;
end;
if i>counter1 then
for l:=k to a do
begin
c[l]:=arn[j]; j:=j-1;
```

Σελίδα 8 από 10



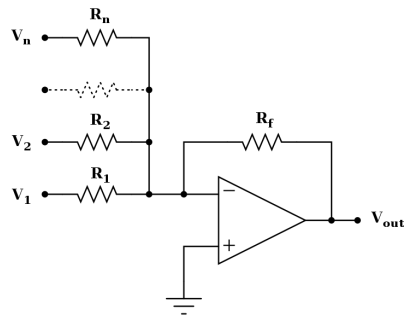


```
end
else
  for l:=k to a do
    begin
      c[l]:=thet[i]; i:=i+1;
    end;
  min:=2000000000;
  for i:=1 to a-1 do
    begin
      temp:=abs(c[i]+c[i+1]);
      if temp<=min then
        begin
          min:=temp;
          ar1:=c[i];
          ar2:=c[i+1];
        end;
      end;
    end;
  if ar1>ar2 then
    begin
      write(output,ar2,' ',ar1);
    end
  else
    begin
      write(output,ar1,' ',ar2);
    end;
  end;
close(output);
close(input);

end.
```

Σελίδα 9 από 10





Σχήμα από: <http://el.wikipedia.org/wiki/Αρχείο:Opampsumming.svg>

Οι παραπάνω απαντήσεις είναι ενδεικτικές και κατά συνέπεια δεν σημαίνει ότι και άλλοι μαθητές δεν υπέβαλαν αντίστοιχες λύσεις.