Find two elements whose sum is closest to zero

#include<iostream>

using namespace std;

int main()

{

int a[10],n,num1,num2,num3,num4,sum;

cout<<"Enter the number of elements: ";

cin>>n;

cout<<"Enter the array elements\n";

for(int i=0;i<n;i++)

cin>>a[i];

sum = a[0] + a[1];

for(int i=0;i<n;i++)

{

num1 = a[i];

for(int j=i+1;j<n;j++)

{

num2 = a[j];

if(abs(num1 + num2)<abs(sum))

{

num3 = num1;

num4 = num2;

sum = num1 + num2;

}

}

}

cout<<"The two elements whose sum is close to 0 are: "<<num3<<" "<<num4;

return 0;

}