

```
1  /// https://toph.co/p/minions-and-war
2  #include<bits/stdc++.h>
3  using namespace std;
4  #define ll long long
5  ll a[1000005],p,q,n;
6  ll fun(ll v){
7      ll ans = 0;
8      for(int i=1; i<=n; i++){
9          if(a[i]<v){
10             ans += (p*(v-a[i]));
11          }else{
12             ans += (q*(a[i]-v));
13          }
14      }
15      return ans;
16  }
17  int main(){
18      int t; scanf("%d",&t);
19      for(int ks=1; ks<=t; ks++){
20          scanf("%lld %lld %lld",&n,&p,&q);
21
22          ll mn=1000000000000, mx=0;
23          for(int i=1; i<=n; i++){
24              scanf("%lld",&a[i]);
25              mn = min(mn,a[i]);
26              mx = max(mx,a[i]);
27          }
28
29          ll ans = 1000000000000000005;
30          ll lo = mn;
31          ll hi = mx;
32
33          while(lo<=hi){
34              ll md1 = lo+(hi-lo)/3;
35              ll md2 = hi-(hi-lo)/3;
36
37              ll v1 = fun(md1);
38              ll v2 = fun(md2);
39
40              ans = min(ans,v1);
41              ans = min(ans,v2);
42
43              if(v1>v2){
44                  lo = md1+1;
45              }
46              else{
47                  hi = md2-1;
48              }
49          }
50
51          printf("%lld\n",ans);
52      }
53
54      return 0;
55  }
```