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#include <fstream>
#include <cmath>
using namespace std;
struct valori {int busy, prim, obs;};
valori v[54];
ifstream f ("date.in");
ofstream g("date.out");
int main()
{ int fl,se,alc,okp,pmin,jet[7],dice,i,x,vpoz,pval,j,k,d,m;
d=2;
while(d*d<=53)
{
for(m=2;m<=53/d;m++)
v[m*d].prim=1;
d++;
while(v[d].prim==1)
d++;}
int val[18]={7,8,12,13,17,18,22,23,27,28,35,36,40,41,45,46,50,51};
for(i=0;i<18;i+=2)
{ v[val[i]].obs=1;v[val[i+1]].obs=2;}
for (se=1;se<=5;se++){
for(i=1;i<=52;i++)
v[i].busy=0;
for(i=1;i<=4;i++)
{ f>>jet[4-i+1];v[jet[4-i+1]].busy=1;}
f>>dice;

for (i=1;i<=dice;i++)
{
f>>x;okp=0;
pmin=jet[1];
vpoz=pmin+x;
fl=0;
if(v[vpoz].busy==0)
{v[pmin].busy=0;
if(v[vpoz].prim==0)
{j=vpoz;
okp=1;
do
j++;
while(v[j].busy==0&& j<=52&&j-vpoz<6);
if(j<=52)
{j--;
v[j].busy=1;
jet[1]=j;
}
else
{v[vpoz].busy=1;
jet[1]=vpoz;}}
if(floor(sqrt(vpoz))==sqrt(vpoz))
{j=vpoz;
okp=1;

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do
  j--;
while(v[j].busy==0&&vpoz-j<6);
if(j>=0)
{
  if(vpoz-j!=6)
  {
    j++;
    v[j].busy=1;
    jet[1]=j;
  }
}
else
{
  v[vpoz].busy=1;
  jet[1]=vpoz;}
if(okp==0 &&v[pmin].obs!=1){
  alc=0;
  for(j=pmin;j<=vpoz;j++)
    alc=alc+v[j].obs;
  if(alc>2&&(v[pmin].obs!=2 || v[vpoz].obs!=1))
  {
    pval=vpoz+1;
    do
    {
      pval--;
      while((pval%x!=0 || v[pval].busy==1)&&pval>pmin);
      if (pval==52)
      {
        fl=1;
        jet[1]=55;}
      else {
        v[pval].busy=1;
        fl=1;
        jet[1]=pval;}}
}
if(okp==0&&fl==0)
  if(pmin>=22&&pmin<=25)
    if(vpoz>27)
      {j=vpoz+1;
      do
      {
        j--;
        if(j%x==0&&v[j].busy==0)
          {v[j].busy=1;jet[1]=j;j=pmin;fl=1;}}
      while(j>pmin+1);}
}
if(okp==0)
  if((pmin>31&&pmin%5==0&&x==6) || (pmin<18&&pmin%5==2&&x==6))
  {j=vpoz+1;
  do
  {
    j--;
    if(j%x==0&&v[j].busy==0)
      {v[j].busy=1;jet[1]=j;j=pmin;fl=1;}}
  while(j>pmin+1);}
}
if(okp==0&&fl==0)
  if(vpoz==52) jet[1]=55;
else
  {v[vpoz].busy=1; jet[1]=vpoz;}
}
}

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fl=0;
if(jet[1]!=55)
    {g<<jet[1]<<" ";fl=1;}
if(fl==0)
    g<<"GAME OVER";
g<<endl;

}
}
```