ll p[500005],ran[500005];

//木の根っこを求める

ll find(ll x){

if(p[x]==x){

return x;

}else{

return p[x] = find(p[x]);

}

}

//ｘとｙの属する集合を併合

void unite(ll x,ll y){

x = find(x);

y = find(y);

if(x==y)return;

if(ran[x]<ran[y]){

p[x]=y;

}else{

p[y]=x;

if(ran[x]==ran[y])ran[x]++;

}

}

bool same(ll x,ll y){

bool ok = false;

if(find(x) == find(y)){

ok = true;

}

return ok;

}