ll prime[6] = {2, 3, 5, 233, 331};

ll qmul(ll x,ll y,ll mod) { // 乘法防止溢出， 如果p \* p不爆LL的话可以直接乘； O(1)乘法或者转化成二进制加法

return (x \* y - (long long)(x / (long double)mod \* y + 1e-3) \*mod + mod) % mod;

}

ll qpow(ll a,ll n,ll mod) {

ll ret = 1;

while(n) {

if(n & 1) ret = qmul(ret, a, mod);

a = qmul(a, a, mod);

n >>= 1;

}

return ret;

}

bool Miller\_Rabin(ll p) {

if(p < 2) return 0;

if(p != 2 && p % 2 == 0) return 0;

ll s = p - 1;

while(! (s & 1)) s >>= 1;

for(int i = 0; i < 5; ++i) {

if(p == prime[i]) return 1;

ll t = s, m = qpow(prime[i], s, p);

while(t != p - 1 && m != 1 && m != p - 1) {

m = qmul(m, m, p);

t <<= 1;

}

if(m != p - 1 && !(t & 1)) return 0;

}

return 1;

}