#include

#include

using namespace std;

struct P

{

long long x, y;

} v[60010], s;

bool operator < (P a, P b)

{

if (a.y > 0)

{

if (b.y > 0)

return a.x\*b.y > a.y\*b.x;

if (b.y == 0)

return b.x < 0;

return 1;

}

if (a.y == 0)

{

if (b.y > 0)

return a.x > 0;

if (b.y == 0)

return 0;

return 1;

}

if (b.y >= 0)

return 0;

return a.x\*b.y > a.y\*b.x;

}

int main()

{

long long ans;

int n, p, q, i;

scanf("%d", &n);

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

scanf("%lld%lld", &v[i].x, &v[i].y);

sort(v, v+n);

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

if (!(v[i] < v[i-1]) && !(v[i-1] < v[i]))

{

v[i].x += v[i-1].x;

v[i].y += v[i-1].y;

v[i-1].x = 0;

v[i-1].y = 0;

}

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

if (v[i].x || v[i].y)

v[p++] = v[i];

n = p;

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

v[i+n] = v[i];

for (s.x = s.y = q = 0; q < n; q++)

{

if (s.x\*s.x+s.y\*s.y >= (s.x+v[q].x)\*(s.x+v[q].x)+(s.y+v[q].y)\*(s.y+v[q].y))

break;

s.x += v[q].x;

s.y += v[q].y;

}

ans = s.x\*s.x+s.y\*s.y;

for (p = 1; p < n; p++)

{

s.x -= v[p-1].x;

s.y -= v[p-1].y;

if (p == q)

{

s.x += v[q].x;

s.y += v[q++].y;

}

while (q-p <= n)

{

if (s.x\*s.x+s.y\*s.y >= (s.x+v[q].x)\*(s.x+v[q].x)+(s.y+v[q].y)\*(s.y+v[q].y))

break;

s.x += v[q].x;

s.y += v[q++].y;

}

if (ans < s.x\*s.x+s.y\*s.y)

ans = s.x\*s.x+s.y\*s.y;

}

printf("%lld\n", ans);

return 0;

}