n年 → 2个月

← $n \times (1+4\%)$

年化收益率 3%

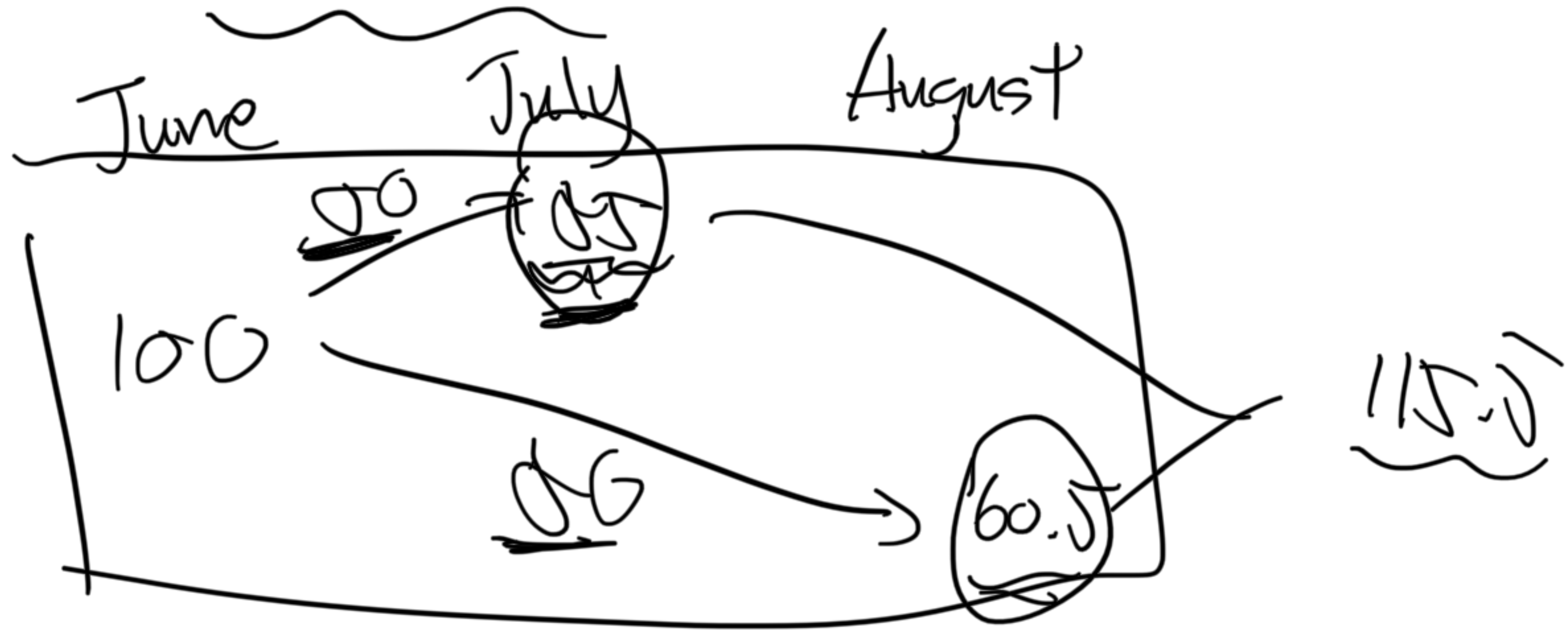
1个月

100 → 100.25

10% $(1+10\%) \times (1+10\%)$

100 —1个月→ 110 —1个月→ 121

还 = 本 + 利



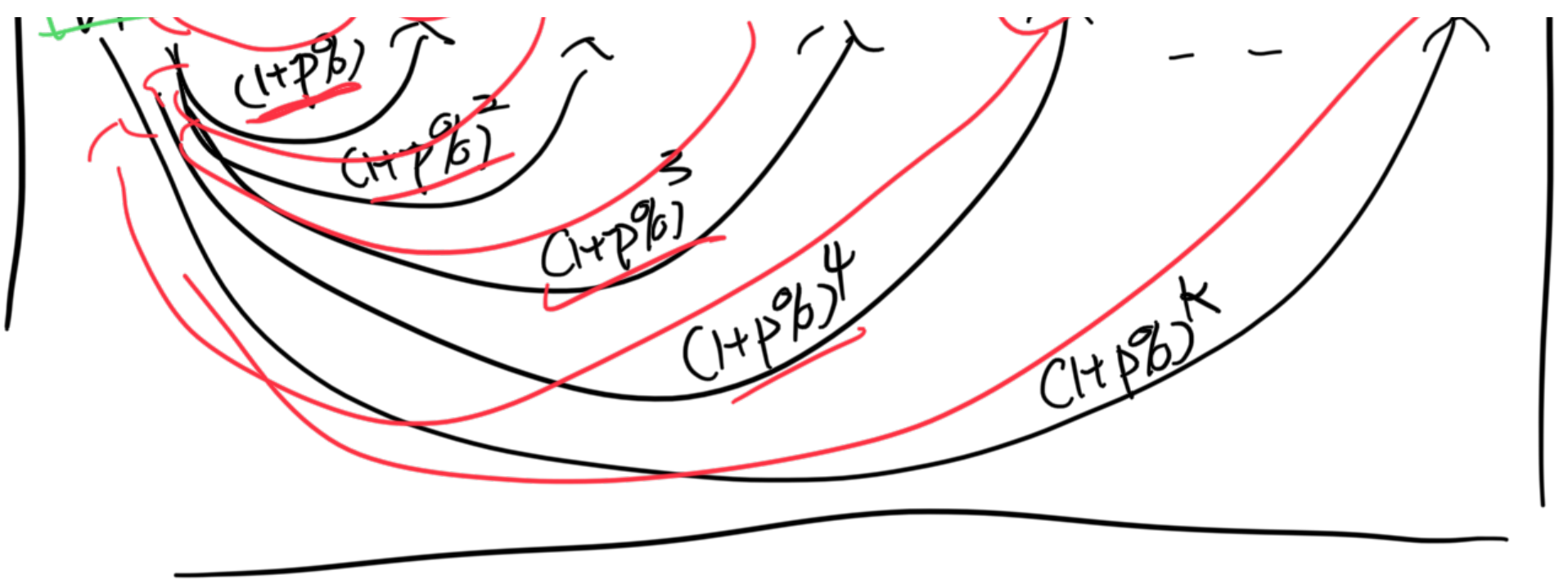
$$\frac{55}{1.1} + \frac{60.5}{1.1 \times 1.1} = 100$$

k

e

$$n = \frac{m}{1+p} + \frac{m}{(1+p)^2} + \frac{m}{(1+p)^3} + \cdots + \frac{m}{(1+p)^k}$$

m m m m m



$$S = a^0 + a^1 + \cdots + a^{k-1} \qquad 0 \sim k-1 \text{ (1-k)}$$

$$aS = a^1 + \cdots + a^k$$

$$(a-1)S = a^k - a^0 = a^k - 1$$

$$S = \frac{a^k-1}{a-1} = \boxed{\frac{1-a^k}{1-a}}\ a \qquad a = \frac{1}{1+p}$$

$$n = \frac{m}{1+p} + \frac{m}{(1+p)^2} + \cdots + \frac{m}{(1+p)^k}$$

$$= \frac{m}{1+p}\left(1 + \frac{1}{1+p} + \cdots + \frac{1}{(1+p)^{k-1}}\right)$$

$$= \frac{m}{1+p} \cdot \frac{1-\left(\frac{1}{1+p}\right)^k}{1-\left(\frac{1}{1+p}\right)}$$

$$n = \frac{m\left(1-\left(\frac{1}{1+p}\right)^k\right)}{p}$$

$$p \cdot \frac{n}{m} = 1 - \frac{1}{(1+p)^k}$$

显式 explicit

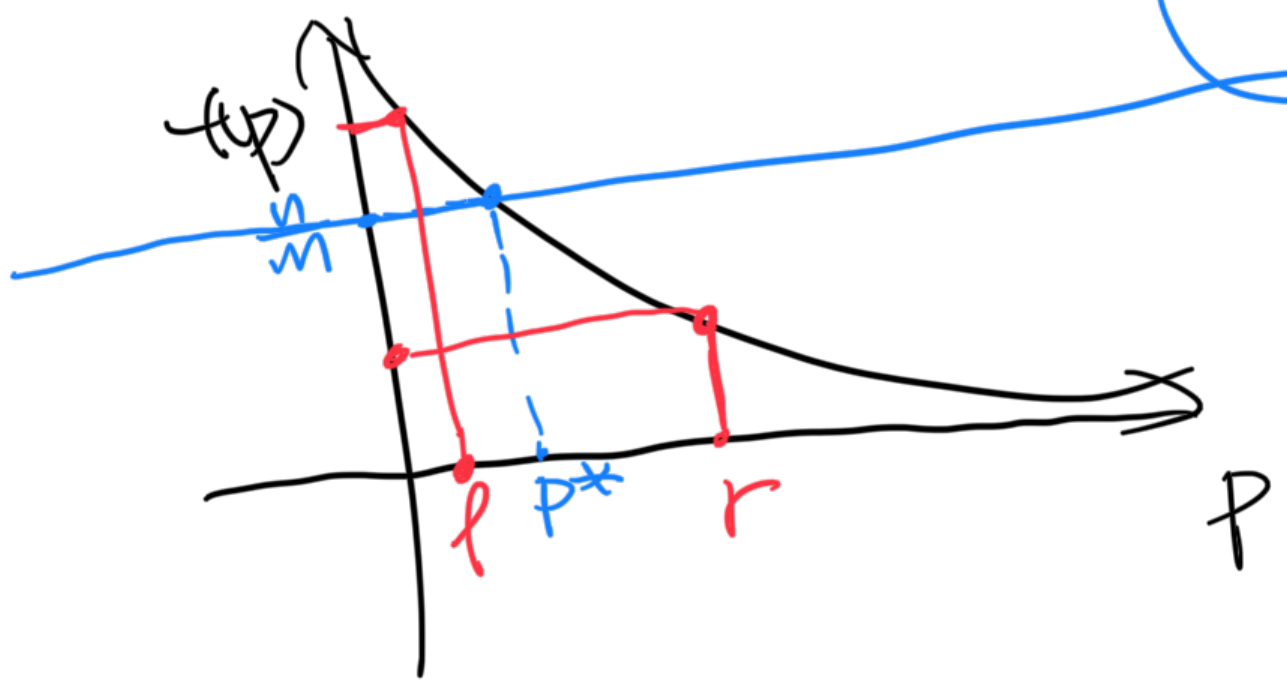
$$p = \boxed{\qquad\qquad}\ x$$

$$\frac{n}{m} = \frac{1}{1+p} + \frac{1}{(1+p)^2} + \cdots + \frac{1}{(1+p)^k}$$

p ↑ 右式 ↓

p ↓ 右式 ↑

$$f(p) = \frac{1}{1+p} + \frac{1}{(1+p)^2} + \cdots + \frac{1}{(1+p)^k} = \frac{n}{m}$$

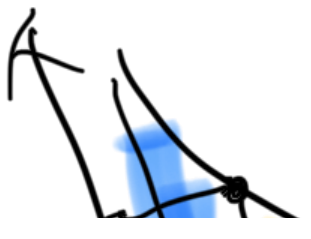


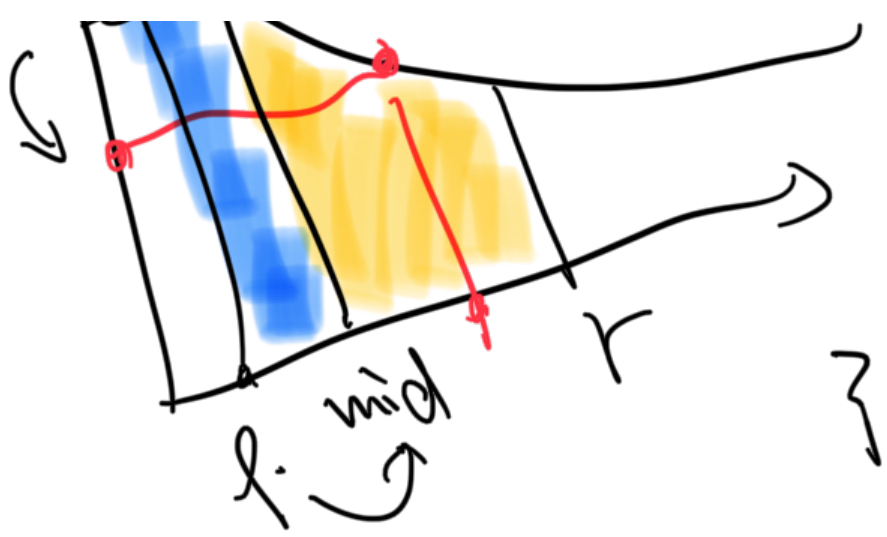
① $\frac{m}{1+p} + \frac{m}{(1+p)^2} + \cdots + \frac{m}{(1+p)^k} = n$

② $\frac{1}{1+p} + \frac{1}{(1+p)^2} + \cdots + \frac{1}{(1+p)^k} < \frac{n}{m}$

③ p ↑ 左边 ↓ ／ p ↓ 左边 ↑


```
double l=0, r=1000
while (r-l>=0.001){
    mid= (l+r)/2
    if (f(mid)>=n/m) {judge(mid)
```



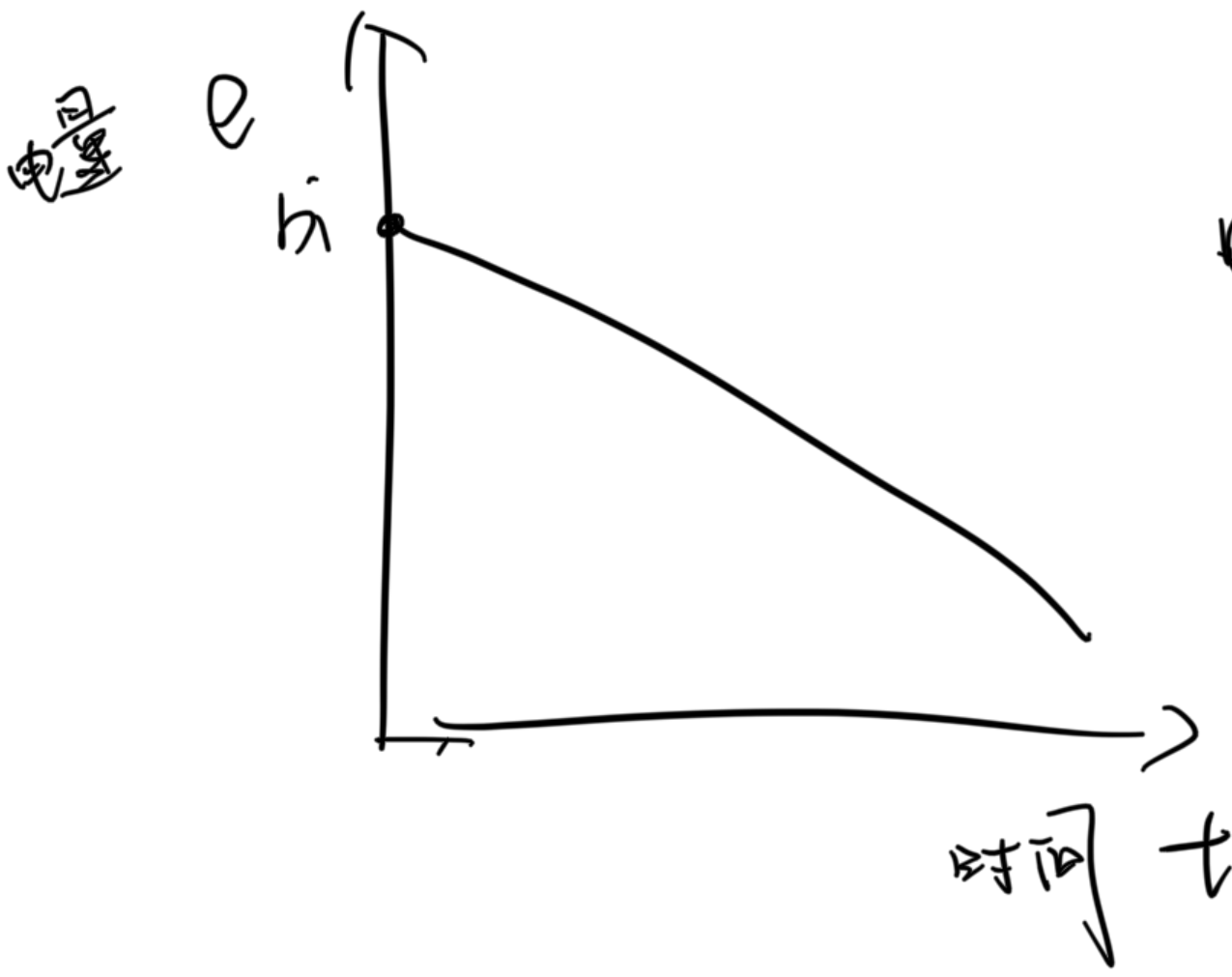


else

r=mid

}

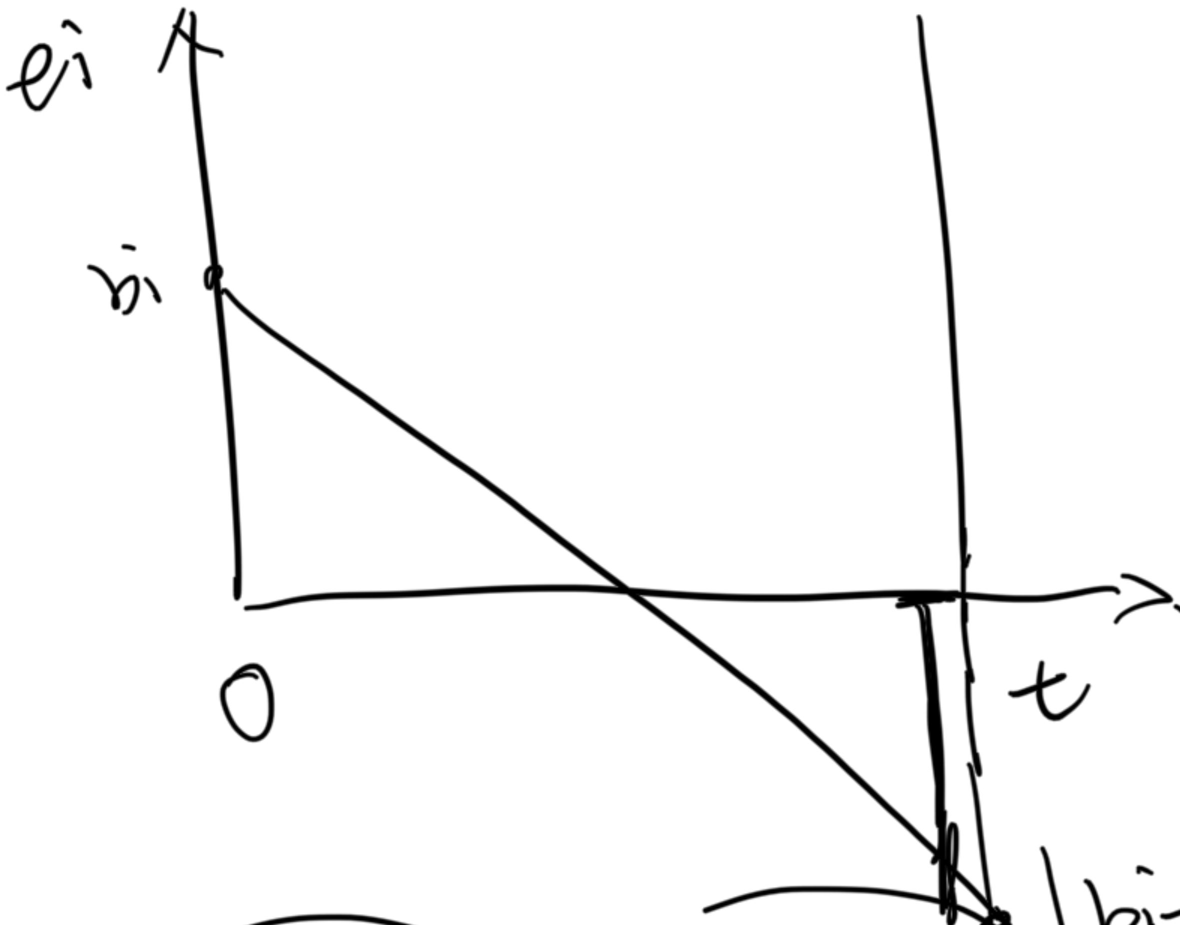
cout << l



$e = b_i - a_i \times t$

$$\frac{e_1^*}{P} + \frac{e_2^*}{P} + \cdots + \frac{e_n^*}{P}$$

$> t_0$



判断能否维持 0~t 所有设备电量不耗尽

$|b_i - a_i \times t|$ 的电量

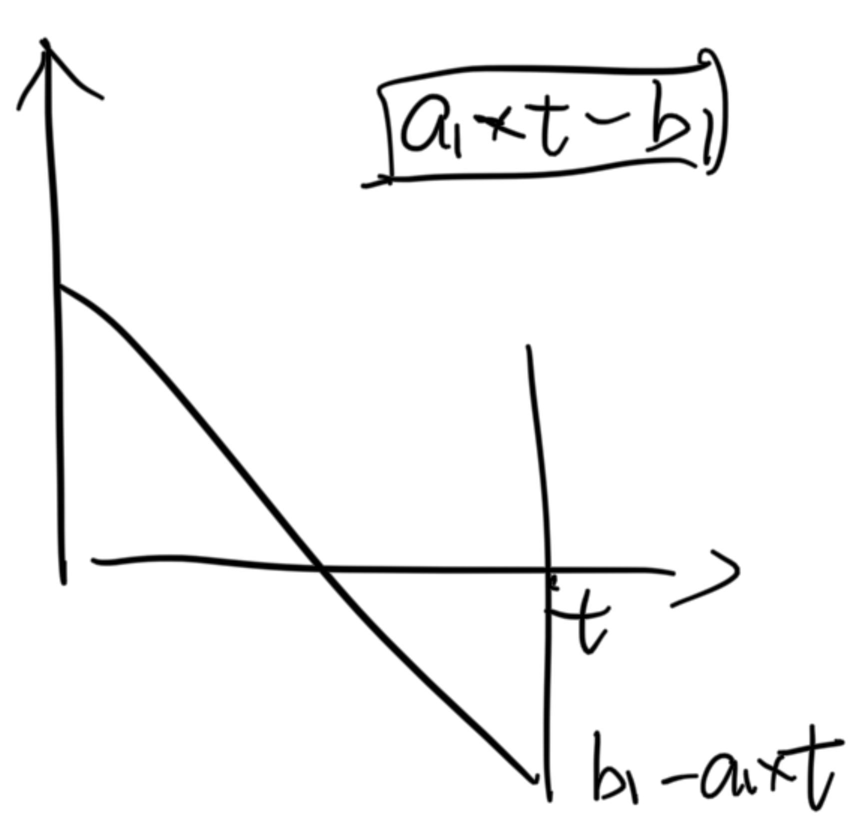
i号设备至少需要 $|b_i - a_i \times t|$ 才能满足在 0~t 时刻不耗尽电量

$\max(a_i t - b_i, 0)$

$|b_1 - a_1 \times t| + |b_2 - a_2 \times t| + \cdots + |b_n - a_n \times t|$

0~t $p \times t$

0



$a_1 \times t - b_1$

考虑每个设备
[illegible]充电电量

可能所需...

所需电量

bool. judge (t)
double res=0
for (i 1~n)
if (bi - ai × t > 0)
continue
else
res += ai × t - bi

return res <= p × t

所需　提供

main
l=0, r=1e10
while ( )

if (judge(mid))
l = mid
else r = mid

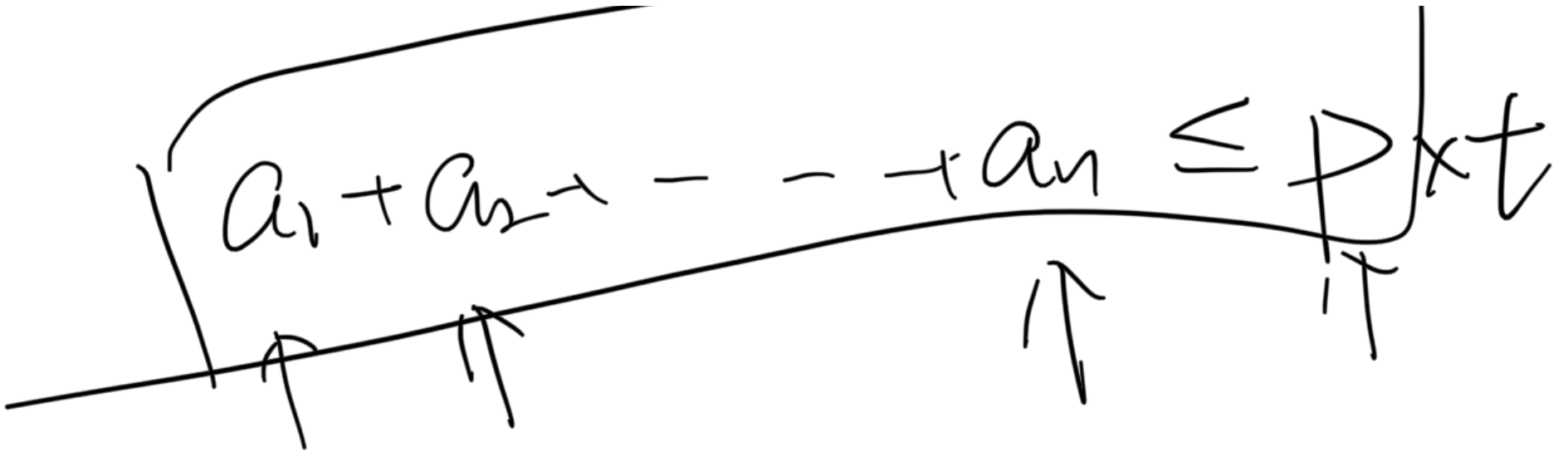
0　1000

10

10 ✓

0 1000

1 2 3 4 5 6 | 7 8 9 10
✓ ✓ ✓ ✓ ✓ ✓ | × × × ×



$n <= 10^5 = 1e5$

$1 <= a_i, b_i <= 10^9$