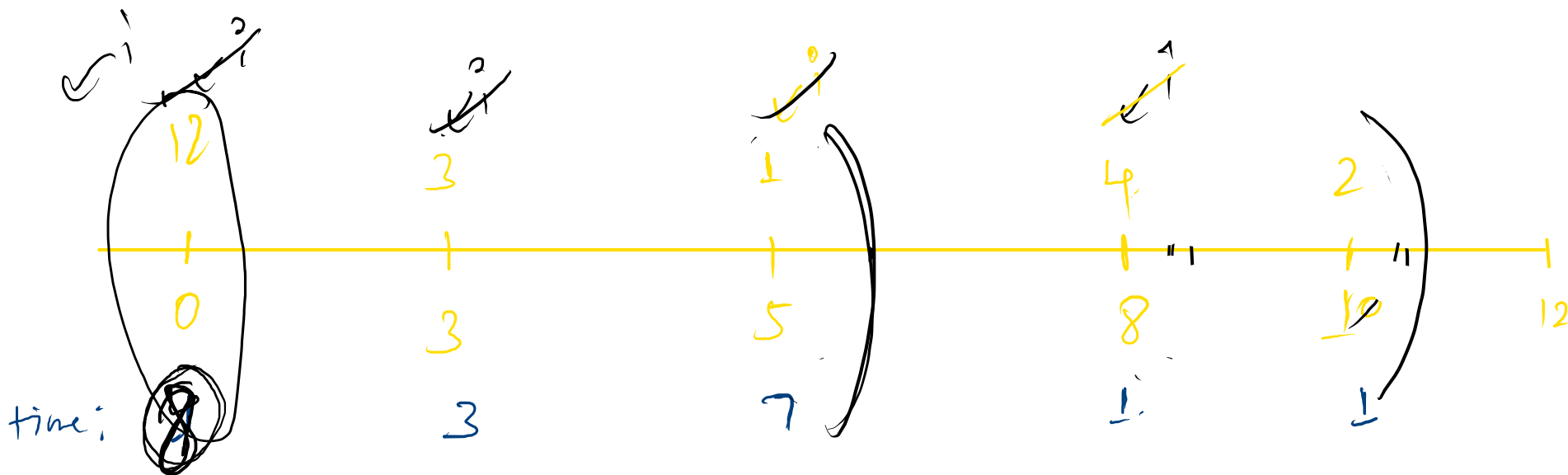


Car fleet

pos: 10 8 0 5 3
 speed: 2 4 3 1 3

time = ~~1~~ 7



Count = 2

Smallest no.

$$n = \frac{100}{5} = \frac{20}{5} = \frac{4}{1} = 1$$

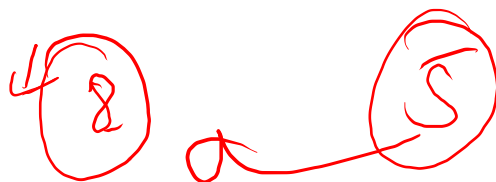
(~~8~~ ~~8~~ ~~7~~ ~~6~~ ~~5~~ ~~4~~ ~~3~~ ~~2~~)

$$100 = 5 \times 20$$

↓

$$= 5 \times 5 \times 4$$

ans = ~~4~~ (4 5 5)



biggest -ve integer

k=3 \leftarrow $\overset{1^{st}}{0}$ $\overset{2^{nd}}{1}$ $\overset{3^{rd}}{2}$ $\overset{4^{th}}{3}$ $\overset{5^{th}}{4}$ $\overset{6^{th}}{5}$ $\overset{7^{th}}{6}$
 $\{ 8, 2, 3, -6, 10, 12, -4, -14 \}$



neg id = $\frac{6}{3}$

Extended euclidean algorithm

$$ax + by = g \quad \text{--- (1)}$$

$$ay' + b(x' - \frac{a}{b}y') = g$$

$$\begin{aligned} x &= y' \\ y &= x' - \frac{a}{b}y' \end{aligned}$$

(x, y, gcd)

```

pair gcd(a, b) {
    if (b == 0) {
        return new pair(1, 0, a);
    }
    int d = gcd(b, a % b);

```

return new pair(dash.y, dash.x - $\frac{a}{b}$ dash.y, dash.gcd);

}

$$\begin{aligned} 34x + 24y &= 2 && x=5, y=-7 \\ \downarrow &&& \\ 24x' + 10y' &= 2 && x'=-2, y'=5 \\ \downarrow &&& \\ 10x'' + 4y'' &= 2 && x''=1, y''=-2 \\ \downarrow &&& \\ 4x''' + 2y''' &= 2 && x'''=0, y'''=1 \\ \downarrow &&& \\ 2x^{iv} + 0y^{iv} &= 2 && \Rightarrow x^{iv}=1, y^{iv}=0 \end{aligned}$$

max Consecutive ones II

$K=2$

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1	0	1	1	1	1	0	0	1	1	1	1	1	1	1

zeroCount: ~~3~~ 2

0 max = ~~1~~ 2 3 4 5 6 ~~7~~ 8

```

while (j < s.length()) {
    if (s[j] == 1) {
        0max = max(0max, j-i+1);
    } else {
        zeroCount++;
        while (zeroCount > K 2) {
            if (s[i] == 0) {
                zeroCount--;
                i++;
            }
            0max = max(0max, j-i+1);
        }
        i++;
    }
}

```

max sum of
Smallest & 2nd Smallest

5 3 1 4 6

~~5~~
→ 5 3

5 3 (1)

5 3 1 4

5 3 1 4 6

~~3~~
→ 3 1

~~3~~ 1 4

~~3~~ 1 4 6

Oman = ~~6~~ ~~8~~ (10)

~~1~~ 4 ~~6~~
→ ~~1~~ 4 → 4 6

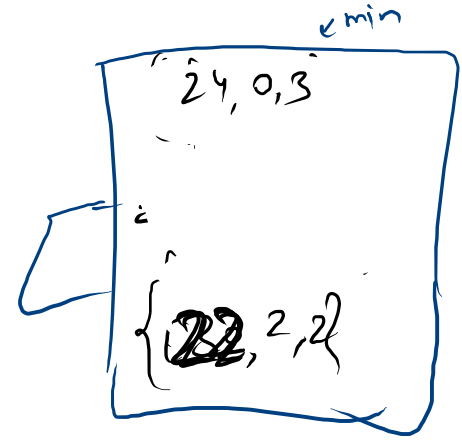
~~1~~ 4 6

Smallest range

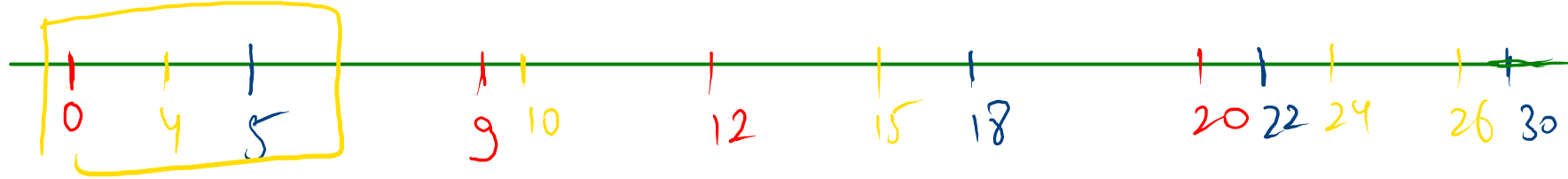
0	4	10	15	24	26
1	0	9	12	20	7
2	5	18	22	30	

ans = 0 20
ans = 8 24

$$(k+n) \log k$$



man = ~~24~~ ~~18~~ ~~10~~ ~~24~~



~~$n+k$~~ $\log n+k$

$n \log n$

~~$(0,9)$~~ ~~$(1,8)$~~ ~~$(7,8)$~~ ~~$(1,6)$~~ ~~$(9,16)$~~ ~~$(7,13)$~~ ~~$(7,10)$~~ ~~$(6,11)$~~ ~~$(6,9)$~~ ~~$(9,13)$~~

$(1,6)$ $(7,8)$
 $(9,13)$

3

\rightarrow $(1,6)$ $(1,8)$ $(7,8)$ $(0,9)$ $(6,9)$ $(7,10)$ $(6,11)$ $(7,13)$ $(9,13)$ $(9,16)$
 \downarrow \downarrow 2 2 2 2 2 2 3 3

