While loop

```
        i=0              i<=1                        ✓
for (intialization , termation , increment/decrement ) {
            if( i ==3) {
                break;
            }

            if (i==2){
                continue;
            }
            _____
            _____
}
```

```
for ( int i= 0; i<=10; i--) {   i [ 0 ] -1 ✓
    └ if ( i ==-1) {
            break;
        }                        ⇒ [ 0 ]
        Syso(i);
}
```

```
                                        i    8✓
                                      [5]-6 7
for ( int i=5 ; i>=0; i++) {
    if ( i==6) { continue;                5
    }                                     7
        Syso(i);
}
```

while Loop

① intialization
② termination
③ incument/decrement.

a → 5

int i = 0; ⟹ intialization

while (i <= 5) { ⟶ terminationation

   syso(i);   True

   i++; ⟶ incument/decrement

}

```
0
1
2
3
4
5
```

while (a < b) {
                  a++;
}   b--;

a →
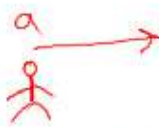
int i = 0;

while (true) { if (i == 3) { break; }

   syso(i)

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

}

$n \geq 1$
$n > 0$ same

$-2 \geq 1 \to$ false

Que using while loop

$n = 10$

$10 \to 7 \to 4 \to 1$

true
while(n>=1) {
    Sysø(n);
    n = n-3;
}

n
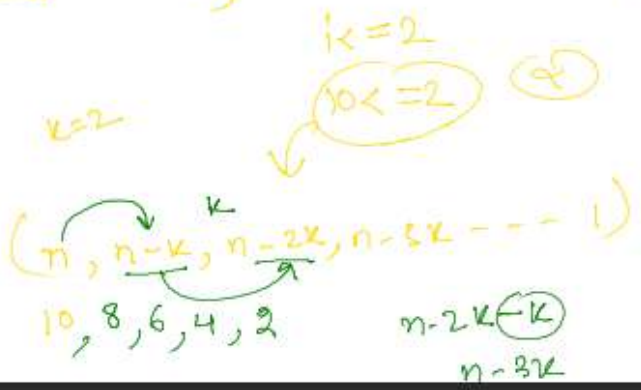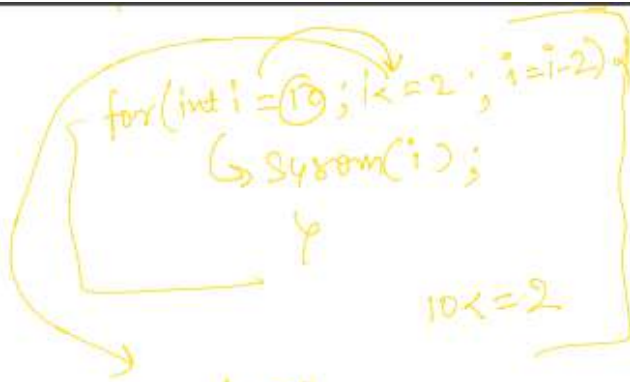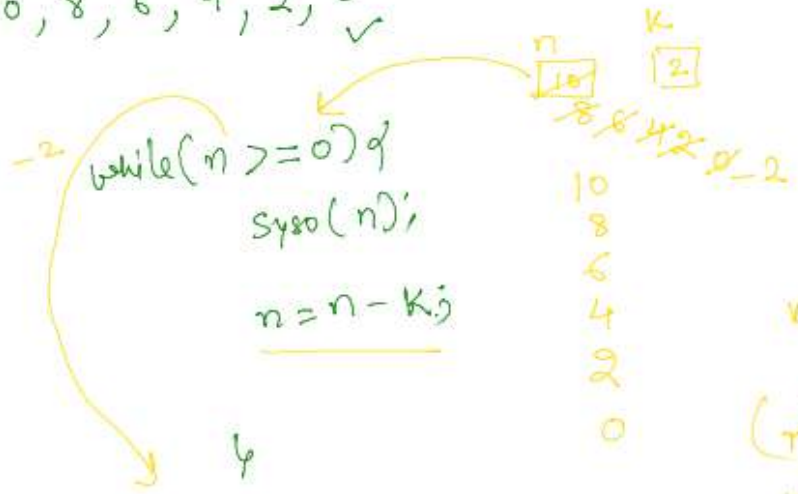| 10 | $\not{7}$ $\not{4}$ $\not{1}$ -2

10
7
4
1

```java
public class Solution {

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);

        int n = scn.nextInt();

        while(n>=1){
            System.out.println(n);
            n = n-3;
        }

        /* Enter your code here. Read input from STDIN. Print output to STDOUT. */
    }
}
```
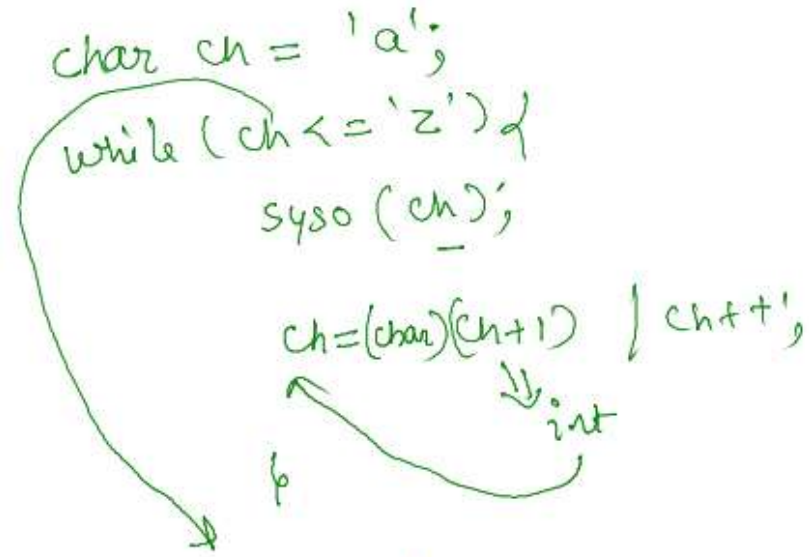
n = 10 7 4 1 -2

10
7
4
1

Qu)

n = 10
k = 2

10, 8, 6, 4, 2, 0 ✓

```
while (n >= 0) {
    syso(n);

    n = n - k;
}
```

n [10] k [2]

8 6 4 2 0 -2

10
8
6
4
2
0

```
for(int i = 10; i <= 2; i = i-2) {
    syso(i);
}
```

10 <= 2

i <= 2

10 <= 2   ∅

k = 2

(n, n-k, n-2k, n-3k --- 1)

10, 8, 6, 4, 2   n-2k (-k)
                    n-3k

Qu)

a b c d --- z

ch = 'a' b c ---- z ↻ ∅

```
char ch = 'a';
while (ch <= 'z') {
    syso(ch);

    ch = (char)(ch + 1)  | ch++;
              ↓ int
}
```

a
b
c

Qus

$$\boxed{a}, c, e ---- y$$

$+2 \quad +2 +2 - - - -$

$$ch \boxed{a} \; c \; e \; g --- y \; @$$

```
char ch = 'a';

while ( ch < 'z') {

    Syso (ch);

    ch = (char) (ch + 2);

}
```

a
c
e
g
,
,
y

```
public class Solution {

    public static void main(String[] args) {

        char ch = 'a';

        while(ch<'z'){
            System.out.println(ch);

            ch = (char)(ch+2);

        }
        /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your cl
    }
}
```

ch = 'a' c

e
g
,
,
y

a
c
e
,
,
y

char ch = 'a'
↓

= (ch) + 1 || ch - 1

ASCII → integer → char (lossy conversion) 2k

97 + 1   4k

ch = (char) (98)   ch = (char) [ch + 1];

Sol   'a', 'B', 'c', 'D', e, f - - - - - - Z
       (1) 2 (3) 4   5   6   26

small case → odd even   char ch = 'a';

upper case → odd even   int i = 0;

b → B -.

while (i <= 26) {
    if (i % 2 == 1) {
        Syso (ch);
    }
    else {
        Syso ((char)(ch - 32))
    }
    ch = (char) (ch + 1);
}

$\cancel{B}$ 32 a
65 ←→ 97

B 32 b
66 ←→ 98

C ↓ ↗ c
67 ← 32 → 99

99 - 32
↓
(char)(67)

```java
public static void main(String[] args) {
    char ch ='a';

    int i =0;

    while(i<=25){
        if(i%2==0){ // lower case
            System.out.println(ch);
        }else{//upper case
            System.out.println((char)(ch-32));
        }

        ch = (char)(ch+1);
        i++;
    }
    /* Enter your code here. Read input from STDIN. Print output to STDOUT. Yo
}
```

Handwritten annotations:

ch = `a' `b' `c' `d' `e'

i = 0 + 2

3

4

(char)(ch-32)

a
B
c
D
e
||
|
|
Z

D

```java
ublic class Solution {

    public static void main(String[] args) {
        Scanner scn = new Scanner(System.in);

        int n = scn.nextInt();

        int i=0;
        while(i<=n){
            if(i%2==0){
                System.out.println(i);
            }
```