

while loop practice

Problem: Given an integer n , find 17 power from 1 to n .

IP: 3

OP: 17^1 17^2 17^3 : 17 289 ○

```
int i=1;
long ans=1;
while ( i<=n ) {
    ans = ans * 17;
    i++;
    sort(ans);
}
```

Ist iteration

$i=1, ans=1$

$ans = 1 * 17 = 17$

$i=2$

IInd iteration

$ans = 17 * 17 = 289$

$i=3$

IIIrd iteration

$ans = 289 * 17$

$i=4$

Problem: finding product for loop [Page-12]

```
int i=0, n, num, prod;
```

```
Scanner sc = ---
```

```
n = sc.nextInt();
```

```
while (i < n) {
```

```
    num = sc.nextInt();
```

```
    prod = prod * num
```

```
    cout << prod;
```

```
    i++
```

```
}
```

1st iteration :

i = 0, num = 4

prod = 1 * 4

i = 1

2nd iteration :

i = 1, num = 6

prod = 4 * 6, i = 2

3rd iteration

i = 2, num = 2

prod = 24 * 2

Problem

steps till n greater than 0 [Page-12]

```
int tc, n, i = 0, j = 0;
```

```
Scanner sc = ---
```

```
tc = sc.nextInt();
```

tc; test case

```
while (i < tc) {
```

```
    j = 0;
```

```
    n = sc.nextInt();
```

```
    while (n > 0) {
```

```
        if (n % 2 == 0)
```

```
            n -= 1;
```

Cricket
over
vala
loop

Cricket
balls in
over
vala loop

```

        else
            n -= 3;
            j++;
        }
        cout(j),
        i++;
    }

```

for loop

```

int n, tc, i = 0, j = 0;
tc = sc.nextInt();
for (; i < tc; ) {
    j = 0;
    n = sc.nextInt();
    for (; n > 0; ) {
        if (n % 2 == 0)
            n = n - 1;
        else
            n = n - 3;
        j++;
    }
    cout(j);
    i++;
}

```

Another way to write tc loop

```
int i=0;
```

```
while (i<tc) {
```

```
    i++;
```

```
}
```

```
while (tc-->0) {
```

```
}
```

