

- Input ✓
- Output ✓
- if - else
- variables
- operators

Q Q

1. You are given as input marks of a student.
2. Display an appropriate message based on the following rules:
 - ✓ 2.1 for marks above 90, print excellent.
 - ✓ 2.2 for marks above 80 and less than equal to 90, print good.
 - ✓ 2.3 for marks above 70 and less than equal to 80, print fair.
 - 2.4 for marks above 60 and less than equal to 70, print meets expectations.
 - 2.5 for marks less than equal to 60, print below par.

Note -> Only change the code in area after - // code here

marks > 90

1

good

5

```
int marks = scn.nextInt();
```

```
if(marks > 90){  
    System.out.println("excellent");  
}
```

```
if(marks > 80 && marks <= 90){  
    System.out.println("good");  
}
```

```
if(marks > 70 && marks <= 80){  
    System.out.println("fair");  
}
```

```
if(marks > 60 && marks <= 70){  
    System.out.println("meets expectations");  
}
```

```
if(marks < 60){  
    System.out.println("below par");  
}
```

marks > 90

good

Slightly

```
int marks = scn.nextInt();
```

```
if(marks > 90){  
    System.out.println("excellent");  
}
```

```
else if(marks > 80 && marks <= 90){  
    System.out.println("good");  
}
```

```
else if(marks > 70 && marks <= 80){  
    System.out.println("fair");  
}
```

```
else if(marks > 60 && marks <= 70){  
    System.out.println("meets expectations");  
}
```

```
else if(marks < 60){  
    System.out.println("below par");  
}
```

```
int marks = scn.nextInt();
```

```
if(marks > 90){  
    System.out.println("excellent");
```

```
}else  
if(marks > 80 && marks <= 90){  
    System.out.println("good");  
}else
```

```
if(marks > 70 && marks <= 80){  
    System.out.println("fair");
```

```
}else  
if(marks > 60 && marks <= 70){  
    System.out.println("meets expectations");
```

```
}else  
if(marks < 60){  
    System.out.println("below par");  
}
```

✓
✓
if (marks > 90) {

}else {

marks <= 90

```

if(marks > 90){
    System.out.println("excellent");
}else
if(marks > 80){
    System.out.println("good");
}else
if(marks > 70){
    System.out.println("fair");
}else
if(marks > 60){
    System.out.println("meets expectations");
}else{
    System.out.println("below par");
}

```

marks => 70

m > 90 F

marks < 90

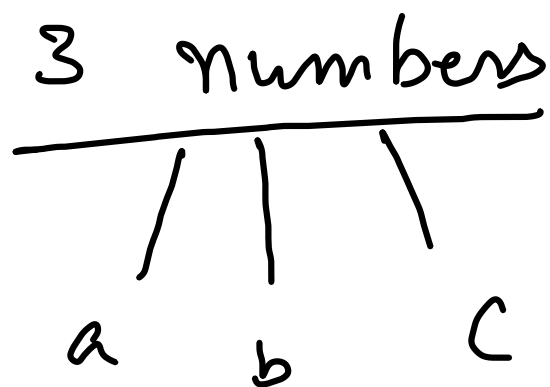
2. Display an appropriate message based on the following rules:

- 2.1 for marks above 90, print excellent.
- 2.2 for marks above 80 and less than equal to 90, print good.
- 2.3 for marks above 70 and less than equal to 80, print fair.
- 2.4 for marks above 60 and less than equal to 70, print meets expectations.
- 2.5 for marks less than equal to 60, print below par.

Note -> Only change the code in area after - // code here

Task

Input



Input :

10
11
9

Output

greatest number

Output : 11

Given

a ≠ b

a ≠ c

b ≠ c

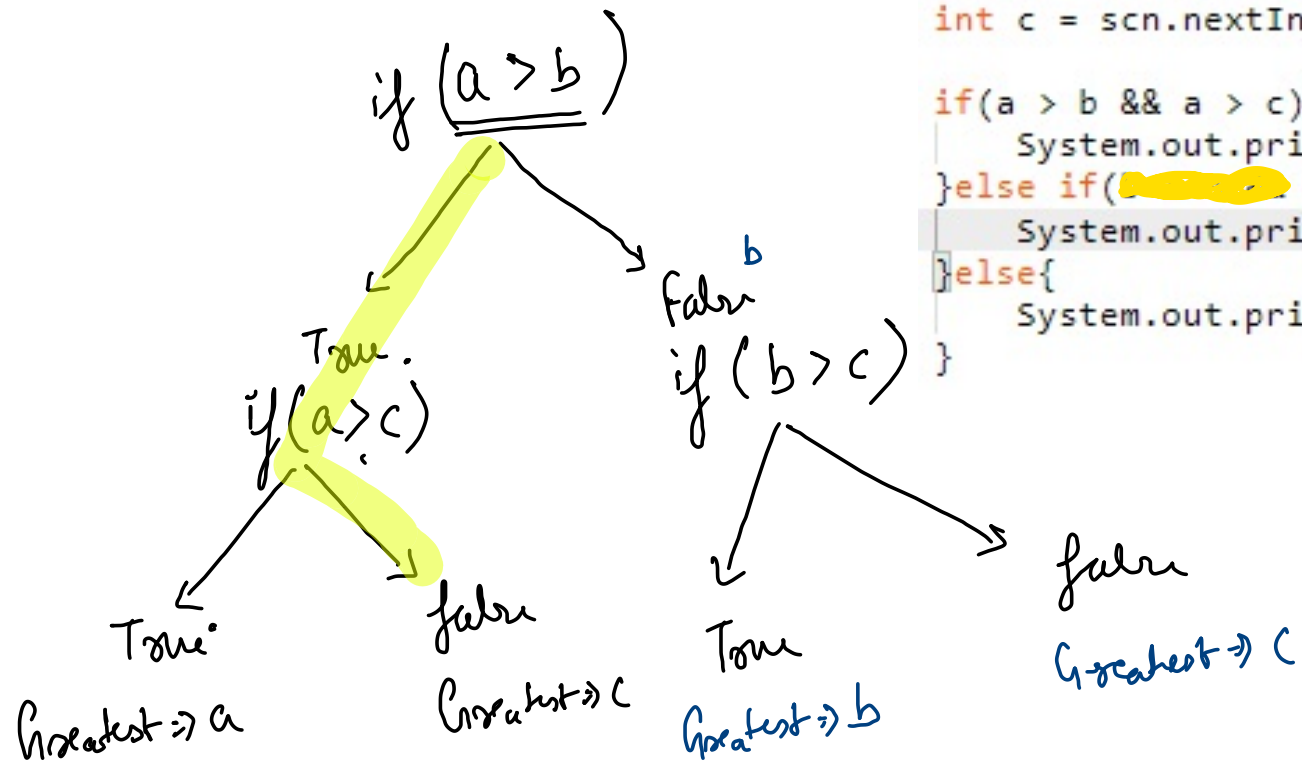
unique

if else
Input
Output

a b c

, numbers \rightarrow unique

$c > a > b$



```
Scanner scn = new Scanner(System.in);
```

```
int a = scn.nextInt();
```

```
int b = scn.nextInt();
```

```
int c = scn.nextInt();
```

```
if(a > b && a > c){  
    System.out.println(a);
```

```
}else if(           b > c){  
    System.out.println(b);
```

```
}else{  
    System.out.println(c);
```

```
}
```

10 11 12

10

a

11

b

12

c

```
if(a > b){  
    // a is larger than b  
    if(a > c){  
        // a is larger than b as well as larger than c  
        System.out.println(a);  
    }else{  
        // a is larger than b but c is larger than a , c > a > b  
        System.out.println(c);  
    }  
}  
else{  
    // b is larger than a  
    if(b > c){  
        // b is larger than a as well larger than c  
        System.out.println(b);  
    }else{  
        // b is larger than a but c is larger than b , c > b > a  
        System.out.println(c);  
    }  
}
```


for

Initializing Phase
for (startingPt ; ending limit ; steps) {

Loop

→ starting point

→ ending limit

→ inc / dec steps

$i = 0, 1, 2, 3, 4, 5$

}

valid

✓
for (int i = 0 ; $i < 5$; $i = i + 1$) {
 System.out.println("mohit");
}

$\begin{matrix} 1 & 2 & 3 & 4 \\ 5 & 6 & 7 & 8 \end{matrix}$

0
1

mohit ✓
mohit ✓
mohit ✓
mohit ✓
mohit ✓
mohit ✓

```
[ for(int i = 0 ; i < 10 ; i = i * 2){  
  |   System.out.println(i);  
  }  
]
```

Infinite loop

↓ ↓ ↓
i = 0, 0, 0, 0, 0, 0, 0, 0, . . . -

```
1  
for(int i = 1 ; i <= 10 ; i = i + 2){  
    System.out.println(i);  
}
```

$i = (1, 3, 5, 7, 9), \underline{\underline{11}}$

1 3 5 7 9

```

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

    ✓ int n = scn.nextInt(); // 5
    for(int i = 1 ; i <= 10 ; i = i + 1){
        int ans = n * i;
        System.out.println(n + " * " + i + " = " + ans);
    }
}

```

$$5 * 1 = 5$$

$$5 * 2 = 10$$

3 * 1 = 3
 3 * 2 = 6
 3 * 3 = 9
 3 * 4 = 12
 3 * 5 = 15
 3 * 6 = 18
 3 * 7 = 21
 3 * 8 = 24
 3 * 9 = 27
 3 * 10 = 30

	i	ans
✓	1	5
✓	2	10
✓	3	
✓	4	
✓	5	
✓	6	
✓	7	
✓	8	
✓	9	
✓	10	
✗	11	

Input
 → n = 10

(n) = 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10

↓
Output → Sum (1 → n)

num -- 2

"Hello" + num

```
Scanner scn = new Scanner(System.in);
```

```
int n = scn.nextInt(); ✓ 5
```

```
int sum = 0;
```

```
for(int i = 1; i <= n; i++){  
    sum = sum + i;  
}
```

1/1

100%

$i = (1, 2, 3, 4, 5), 6$

```
System.out.println(sum); ✓
```

$Sum = 0 + 1 + 2 + 3 + 4 + 5$

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

```
    int n = scn.nextInt();
```

```
    int sum = 0;
```

```
    for(int i = 1; i <= n; i = i + 1){  
        sum = sum + i;  
    }
```

```
    System.out.println(sum);
```

```
}
```

⇒ 15

$Sum(1 \rightarrow n) \Rightarrow \left[\frac{n * (n+1)}{2} \right]$

Prime Num \rightarrow 2, 3, 5, 7, 11, 13, 17, 19, 23,
 \rightarrow factors \Rightarrow ①, num

25 \rightarrow (1, 5, 25)
factor (num) == 2 \rightarrow True (Prime)
 \rightarrow False (Not Prime)

not prime

n = 100
Brute force
fact
(2, 3, 4, 5, ..., 99)

```

Scanner scn = new Scanner(System.in);

// write ur code here
int num = scn.nextInt();

int flag = 1; // 1 -> prime
for(int i = 2 ; i <= (num-1) ; i++){
    if(num % i == 0){
        // number is not prime
        flag = 0; // 0 -> not prime
    }
}

if(flag == 1){
    System.out.println("prime");
}else{
    System.out.println("not prime");
}

```

num = 15

↓ ↓
i = 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9 , 10 , 11 , 12 , 13 , 14

break

```

// write ur code here
int num = scn.nextInt();

int flag = 1; // 1 -> prime
for(int i = 2 ; i <= (num-1) ; i++){
    if(num % i == 0){
        // number is not prime
        flag = 0; // 0 -> not prime
        break;
    }
}

if(flag == 1){
    System.out.println("prime");
}else{
    System.out.println("not prime");
}

```

num = 6 $(2 \rightarrow \underline{n-1})$

i = 2 3 4 5 6 7 8 9

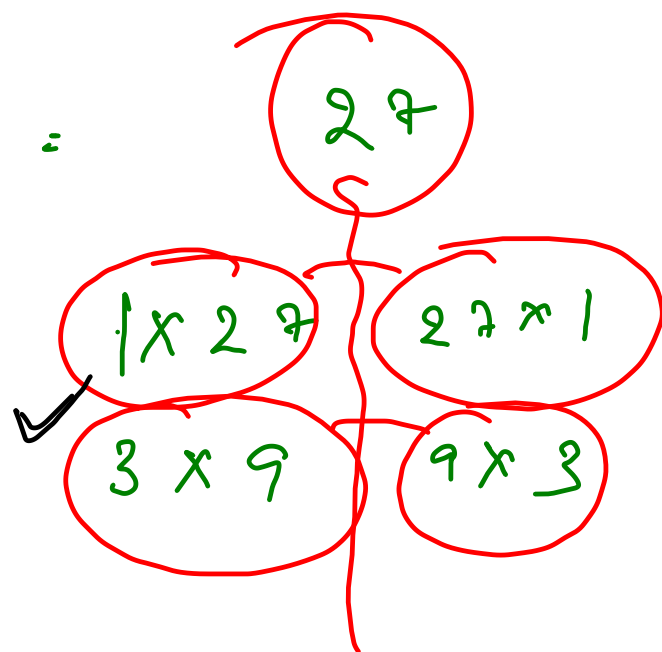
num = 100 ~~X~~

51 → 99

num = 1000 ~~X~~

501 → 999

num =



$$\text{Sqrt}(27) = 5.2$$

$$= 5$$

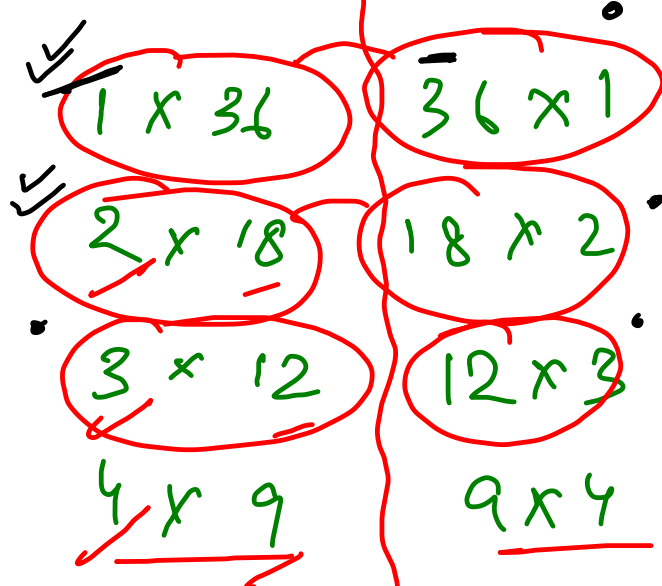
$$\text{fac} = 2, \overset{\checkmark}{3}, 4, 5$$

$$y = n$$

$$y = n/2$$

$$\underline{\underline{y = \sqrt{n}}}$$

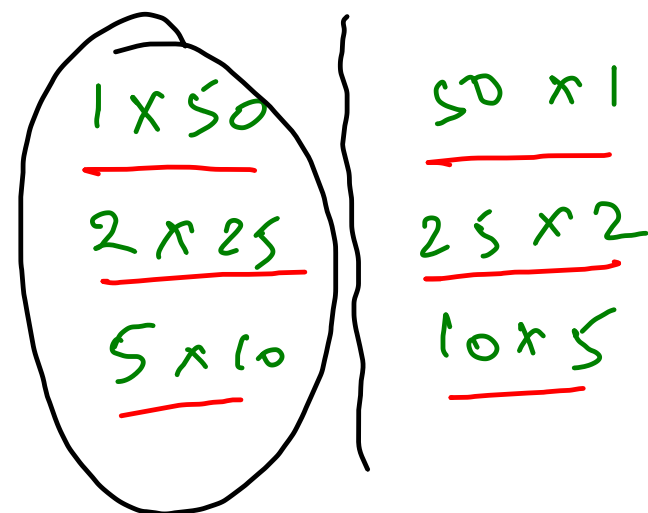
num = 36



$$\underline{\underline{6 \times 6}} \quad \text{Sqrt} = 6$$

$$\text{fac} = 2, 3, \underline{\underline{4}}, \underline{\underline{6}}, 5$$

num = 50

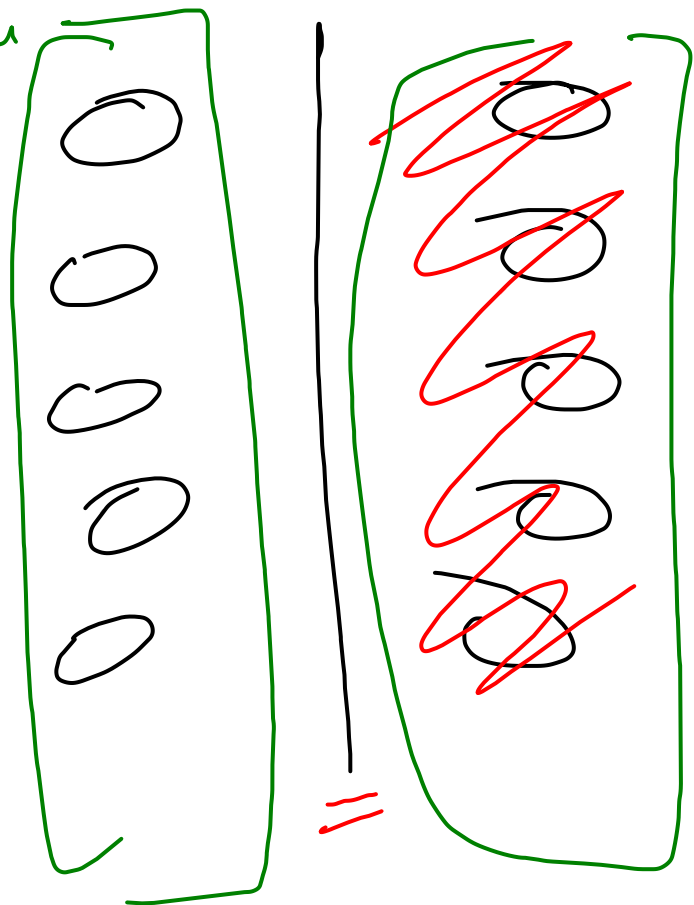


$$\text{Sqrt} \Rightarrow 7.1$$

$$= 7$$

$$2, 3, 4, 5, 6, 7$$

for



29

\sum
 $\alpha \quad \alpha \quad \alpha \quad \alpha$
 $2, 3, 4, 5$

$2 \rightarrow n-1$

$2 \rightarrow n/2$

$2 \rightarrow \sqrt{n}$

$\text{for } (i=2 ; \underline{i \leq \sqrt{n}} ; i++) \{$

$i \leq \sqrt{n}$ ✓

$i \times i \leq n$ ✓

$2 \leq n$

\sqrt{n}
 $i \leq \sqrt{n}$

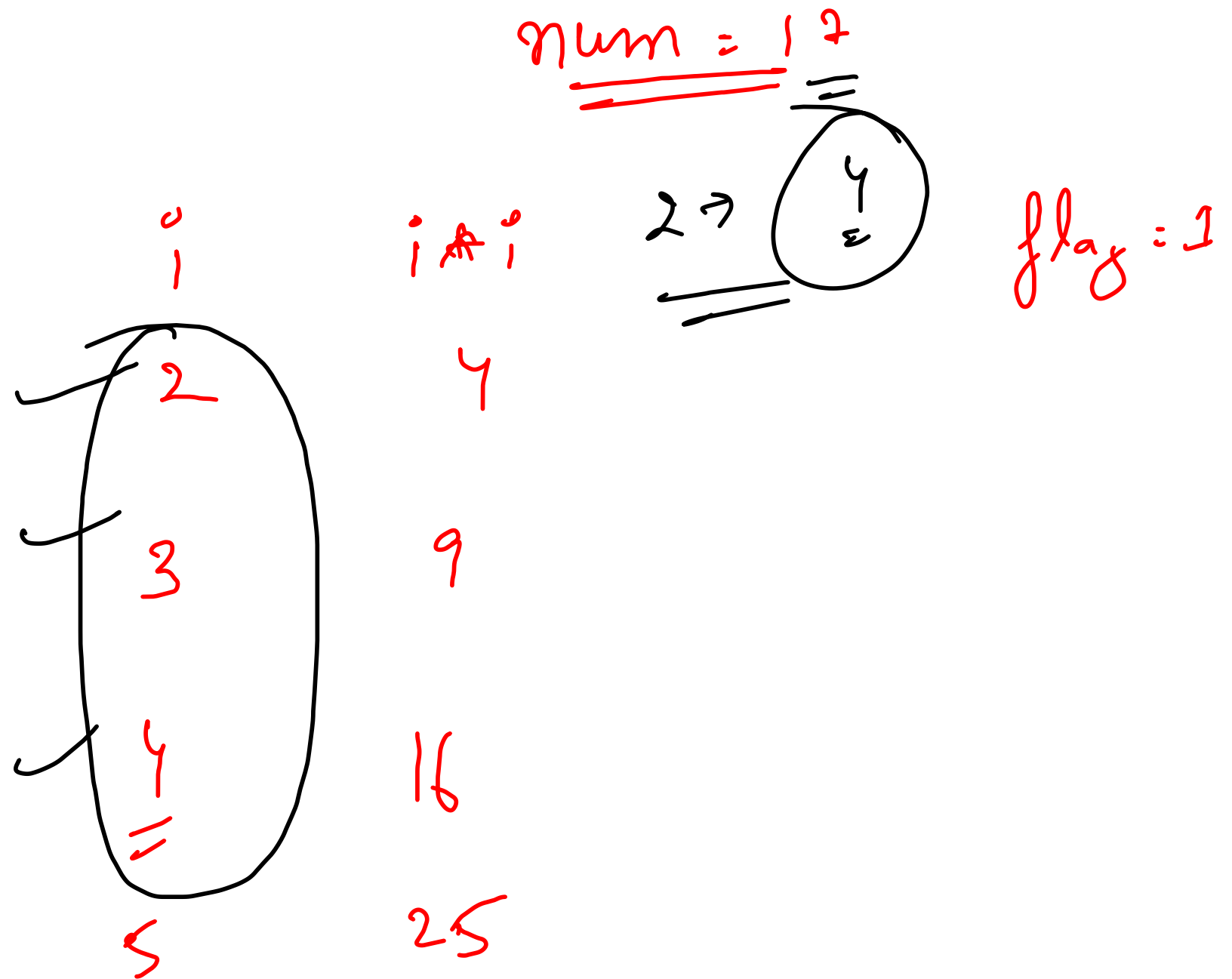

```

// write ur code here
int num = scn.nextInt();

int flag = 1; // 1 -> prime
for(int i = 2 ; i*i <= num ; i++){
    if(num % i == 0){
        // number is not prime
        flag = 0; // 0 -> not prime
        break;
    }
}

if(flag == 1){
    System.out.println("prime");
}else{
    System.out.println("not prime");
}

```



Example

Sample Input

```
5 = T
13
2
3
4
5
```

Sample Output

```
prime
prime
prime
not prime
prime
```

num \rightarrow prime / not prime

✓ prime




```
import java.util.*;

public class Main{

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

        // write ur code here
        int num = scn.nextInt();

        int flag = 1; // 1 -> prime
        for(int i = 2 ; i*i <= num ; i++){
            if(num % i == 0){
                // number is not prime
                flag = 0; // 0 -> not prime
                break;
            }
        }

        if(flag == 1){
            System.out.println("prime");
        }else{
            System.out.println("not prime");
        }
    }
}
```

Thinn
[→ input
→ check