* Prime → Divisible by 1 or itself.

1. Case 1 → ≤ 1 → neither prime nor composite

2. Case 2 → > 1
$$\Downarrow$$

E.g → 50


```
1 * 50        50 * 1          < (7)
2 * 25        25 * 2
5 * 10        10 * 5
```
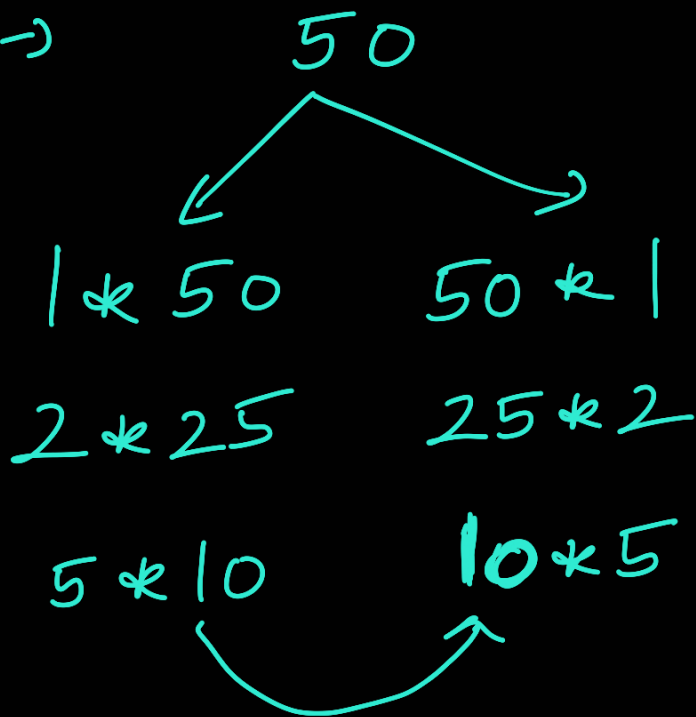
* Factor are repeating after 5 or
$$\leq \sqrt{n}$$
$$\Rightarrow \lfloor \sqrt{50} \rfloor = (7) \rightarrow \text{after 7 factors will repeat, so check till } \sqrt{n}$$

Pseudocode

$\rightarrow$ 2 $\longrightarrow$ $i * i <= n$

    $\hookrightarrow$ check $n \% i == 0$

        $\hookrightarrow$ so not prime

$\rightarrow$ After whole loop, not even a single
divisor, then prime

* Time comp :$\rightarrow$ O $(\sqrt{n})$

* Spare Comp :- O (1)
   (Extra space)

* Significant decrease in computation in
Case of very large number