Day -17

Leetcode Problems

* <u>Add digit:</u> (and gives o/p in single digit)

$$27 = 9$$
$$62 = 8$$

⇒ If $249 = 17$ ⊗
         ↳ $= 1 + 7 = 8$ ✓

```
 10 | 27 |
 10 |  2 | 7 ─┐
    |  0 | 2    7 + 2 = 9
                └──┘
```

* <u>Leap Year:</u>

① 400 se divide. → LY
② 4 se divide and 100 se nhi → LY
③ other than above conditions → not a leapyear.

* <u>Reverse Integer:</u>

⇒ $216 → 612$, $234 → 432$

⇒ $x = ?$

```
int ans = 0, rem;
while(x) {
     rem = x % 10;
     x /= 10;
     ans = ans × 10 + rem;
```

⇒ We got overflow (integer overflow)

$$\text{ans} \times 10 + \text{rem} > \text{INT\_MAX}$$

$$\text{ans} > \frac{\text{INT\_MAX} - \text{rem}}{10}$$

$$\text{ans} > \frac{\text{INT\_MAX}}{10} \quad \rightarrow \text{ if true then}$$
$$\text{return } 0$$

Also we get min value less than integer limit —

for this, $\text{ans} * 10 + \text{rem} < \text{INT\_MIN}$

$$\text{ans} < \frac{\text{INT\_MIN}}{10}$$

* **Power of 2:**

1	→	1			
2	→	10	2	16	0
4	→	100	2	8	0
8	→	1000	2	4	0
16	→	10000	2	2	0
32	→	100000		1	

rem all 0

↳ break cond.

* **Sqrt x :**

$$16 \rightarrow 4$$

Use the previous condition. when we get overflow error.

* **Palindrome:**

=)   121 → 121 ✓

=)   63 → 36 ✗

=)   126 → 621 ✗

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* **Complement of a no.**

$S = 101$		$13 = 1101$
$010 = 2$		$0111 10$
		$0010 → 2$

```
2 | 27 |
2 | 13 | 1 → 0    → for this you can do —
2 | 6  | 1 → 0
2 | 3  | 0 → 1       rem = rem^1 :
2 | 1  | 1 → 0       1^1 = 0
  | 0  | 1 → 0       0^1 = 1
```