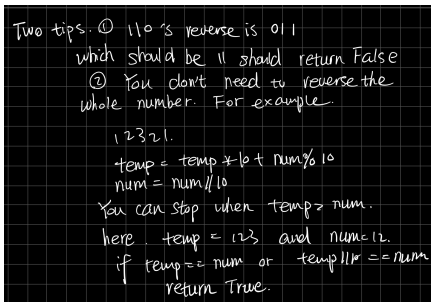
Math

```
Input: 10
Output: false
Explanation: Reads 01 from right to left. Therefore it is not a palindrome.
```



- 2 ~~Add Two Numbers (/problems/add-two-numbers)~~
- ✔ 13 ~~Roman to Integer (/problems/roman-to-integer)~~
- 9 Palindrome Number (/problems/palindrome-number)
- ✔ 12 Integer to Roman (/problems/integer-to-roman)

```
M = ["", "M", "MM", "MMM"]
C = ["", "C", "CC", "CCC", "CD", "D", "DC", "DCC", "DCCC", "CM"]
X = ["", "X", "XX", "XXX", "XL", "L", "LX", "LXX", "LXXX", "XC"]
I = ["", "I", "II", "III", "IV", "V", "VI", "VII", "VIII", "IX"]
return M[num//1000] + C[(num%1000)//100] + X[(num%100)//10] + I[num%10];
```

- 7 Reverse Integer (/problems/reverse-integer) $[-2^{31}, 2^{31} - 1]$.
- ~~535~~ ~~Encode and Decode TinyURL~~ (/problems/encode-and-decode-tinyurl)
- 66 ~~Plus One (/~~problems/plus-one)

```
Input: 38
Output: 2
Explanation: The process is like: 3 + 8 = 11, 1 + 1 = 2.
             Since 2 has only one digit, return it.
```

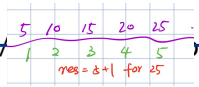
- 258 Add Digits (/problems/add-digits)

```
return 0 if num == 0 else (num - 1) % 9 + 1
```

- ~~149~~ ~~Max Points on a Line (/problems/max-points-on-a-line)~~

Will do this in hashtable

- ✔ 67 ~~Add Binary~~ (/problems/add-binary)
- 202 ~~Happy Number (/problems/happy-number)~~
- 171 ~~Excel Sheet Column Number (/problems/excel-sheet-column-number)~~
- 50 ~~Pow(x, n) (/problems/powx-n)~~
- ~~172~~ ~~Factorial Trailing Zeroes (/~~ ~~rial-trailing-zeroes)~~



No other tricks, can skip

```
Input: 5
Output: 1
Explanation: 5! = 120, one trailing zero.
```

- ~~8~~ ~~String to Integer (atoi) (/problems/strir~~
- 233 Number of Digit One (/problems/numb

```
class Solution:
    def countDigitOne(self, n):
        """
        :type n: int
        :rtype: int
        """

        ones, m = 0, 1
        while m <= n:
            ones += (n//m + 8) // 10 * m + (n//m % 10 == 1) * (n%m + 1)
            m *= 10
        return ones
```

- 273 Integer to English Words (/problems/ir
- 728 ~~Self Dividing Numbers (/~~problems/self
- 319 Bulb Switcher (/problems/bulb-switch
- 223 Rectangle Area (/problems/rectangle-area)
- 29 Divide Two Integers (/problems/divide-two-integers)
- ✔ ~~268~~ ~~Missing Number (/problems/missing-number)~~
- 326 Power of Three (/~~problems/power-of-three)~~

```
public class Solution {
public boolean isPowerOfThree(int n) {
    // 1162261467 is 3^19,  3^20 is bigger than int
    return ( n>0 &&  1162261467%n==0);
}
```

- 43 Multiply Strings (/problems/multiply-strings)

✔ 279 ~~Perfect Squares (/problems/perfect-squares)~~

```
if n < 3:
    return 0
primes = [True] * n
primes[0] = primes[1] = False
for i in range(2, int(n ** 0.5) + 1):
    if primes[i]:
        primes[i * i: n: i] = [False] * len(primes[i * i: n: i])
return sum(primes)
```

335 Self Crossing (/probl

204 Count Primes (/prob

453 Minimum Moves to Equal Array Elements (/problems/minimum-moves-to-equal-array-elements)

69 Sqrt(x) (/problems/sqrtx)

65 Valid Number (/problems/valid-number)

224 Basic Calculator (/problems/basic-calculator)

Write a program to find the `n`-th ugly number.

Ugly numbers are **positive numbers** whose prime factors only include `2, 3, 5`.

Example:

```
Input: n = 10
Output: 12
Explanation: 1, 2, 3, 4, 5, 6, 8, 9, 10, 12 is the sequence of the first 10 ugly numbers.
```

Note:

1. `1` is typically treated as an ugly number.
2. `n` **does not exceed 1690.**

413 Arithmetic Slices (/problems/arithmeti

Example 1:

```
Input: [1,2,3]
Output: 6
```

Example 2:

```
Input: [1,2,3,4]
Output: 24
```

628 Maximum Product of Three Numbers (/problems/maximum-product-of-three-numbers) O(1) space O(n) time s

166 Fraction to Recurring Decimal (/problems/fraction-to-re

Example 1:

```
Input: numerator = 1, denominator = 2
Output: "0.5"
```

Example 2:

```
Input: numerator = 2, denominator = 1
Output: "2"
```

Example 3:

```
Input: numerator = 2, denominator = 3
Output: "0.(6)"
```

~~357 Count Numbers with Unique Digits (/problems/count-numbers-with-unique-digits)~~

Given a **non-negative** integer n, count all numbers with unique digits, x, where $0 \le x < 10^n$.

Example:

```
Input: 2
Output: 91
Explanation: The answer should be the total numbers in the range of 0 ≤ x < 100,
             excluding 11,22,33,44,55,66,77,88,99
```

264 Ugly Number II (/problems/ugly-number-ii)

343 Integer Break Given a positive integer *n*, break it into the sum of **at least** two positive integers and maximize the product of those integers. Return the maximum product you can get.

✔ 60 Permutation Sequence (/problems/permutation-sequer

1. `"123"`
2. `"132"`
3. `"213"`
4. `"231"`
5. `"312"`
6. `"321"`

Given *n* and *k*, return the k^{th} permutation sequence.

296 Best Meeting Point (/problems/best-meeting-point)

`|p2.x - p1.x| + |p2.y - p1.y|`.

Example:

```
Input:

1 - 0 - 0 - 0 - 1
|   |   |   |   |
0 - 0 - 0 - 0 - 0
|   |   |   |   |
0 - 0 - 1 - 0 - 0

Output: 6
```

~~372 Super Pow (/problems/super-pow)~~

812 Largest Triangle Area (/problems/largest-triangle-area)

400 Nth Digit (/problems/nth-digit)

368 Largest Divisible Subset (/problems/largest-divisible-subset)

313 Super Ugly Number (/problems/super-ugly-number)

537 Complex Number Multiplication (/problems/complex-number-multiplication)

396 Rotate Function (/problems/rotate-function)

672 Bulb Switcher II (/problems/bulb-switcher-ii)

753 Cracking the Safe (/problems/cracking-the-safe)

883 Projection Area of 3D Shapes (/problems/projection-area-of-3d-shapes)

829 Consecutive Numbers Sum (/problems/consecutive-numbers-sum)

553 Optimal Division (/problems/optimal-division)

942 DI String Match (/problems/di-string-match)

887 Super Egg Drop (/problems/super-egg-drop)

633 Sum of Square Numbers (/problems/sum-of-square-numbers)

367 Valid Perfect Square (/problems/valid-perfect-square)

507 Perfect Number (/problems/perfect-number)

877 Stone Game (/problems/stone-game)

908 Smallest Range I (/problems/smallest-range-i)

645 Set Mismatch (/problems/set-mismatch)

441 Arranging Coins (/problems/arranging-coins)

462 Minimum Moves to Equal Array Elements II (/problems/minimum-moves-to-equal-array-elements-ii)

598 Range Addition II (/problems/range-addition-ii)

670 Maximum Swap (/problems/maximum-swap)

858 Mirror Reflection (/problems/mirror-reflection)

365 Water and Jug Problem (/problems/water-and-jug-problem)

423 Reconstruct Original Digits from English (/problems/reconstruct-original-digits-from-english)

836 Rectangle Overlap (/problems/rectangle-overlap)

885 Spiral Matrix III (/problems/spiral-matrix-iii)

247 Strobogrammatic Number II (/problems/strobogrammatic-number-ii) 🔓

248 Strobogrammatic Number III (/problems/strobogrammatic-number-iii) 🔓

592 Fraction Addition and Subtraction (/problems/fraction-addition-and-subtraction)

478 Generate Random Point in a Circle (/problems/generate-random-point-in-a-circle)

246 Strobogrammatic Number (/problems/strobogrammatic-number) 🔓

593 Valid Square (/problems/valid-square)

517 Super Washing Machines (/problems/super-washing-machines)

891 Sum of Subsequence Widths (/problems/sum-of-subsequence-widths)

754 Reach a Number (/problems/reach-a-number)

780 Reaching Points (/problems/reaching-points)

775 Global and Local Inversions (/problems/global-and-local-inversions)

640 Solve the Equation (/problems/solve-the-equation)

397 Integer Replacement (/problems/integer-replacement)

360 Sort Transformed Array (/problems/sort-transformed-array) 🔓

523 Continuous Subarray Sum (/problems/continuous-subarray-sum)

781 Rabbits in Forest (/problems/rabbits-in-forest)

892 Surface Area of 3D Shapes (/problems/surface-area-of-3d-shapes)

899 Orderly Queue (/problems/orderly-queue)

660 Remove 9 (/problems/remove-9) 🔓

868 Binary Gap (/problems/binary-gap)

805 Split Array With Same Average (/problems/split-array-with-same-average)

483 Smallest Good Base (/problems/smallest-good-base)

910 Smallest Range II (/problems/smallest-range-ii)

869 Reordered Power of 2 (/problems/reordered-power-of-2)

914 X of a Kind in a Deck of Cards (/problems/x-of-a-kind-in-a-deck-of-cards)

794 Valid Tic-Tac-Toe State (/problems/valid-tic-tac-toe-state)

810 Chalkboard XOR Game (/problems/chalkboard-xor-game)

906 Super Palindromes (/problems/super-palindromes)

952 Largest Component Size by Common Factor (/problems/largest-component-size-by-common-factor)

634 Find the Derangement of An Array (/problems/find-the-derangement-of-an-array) 🔓

782 Transform to Chessboard (/problems/transform-to-chessboard)

651 4 Keys Keyboard (/problems/4-keys-keyboard) 🔓

878 Nth Magical Number (/problems/nth-magical-number)

866 Prime Palindrome (/problems/prime-palindrome)

800 Similar RGB Color (/problems/similar-rgb-color) 🔓

789 Escape The Ghosts (/problems/escape-the-ghosts)

469 Convex Polygon (/problems/convex-polygon) 🔓

949 Largest Time for Given Digits (/problems/largest-time-for-given-digits)

625 Minimum Factorization (/problems/minimum-factorization) 🔓

964 Least Operators to Express Number (/problems/least-operators-to-express-number)

573 Squirrel Simulation (/problems/squirrel-simulation) 🔓

356 Line Reflection (/problems/line-reflection) 🔓

927 Three Equal Parts (/problems/three-equal-parts)

902 Numbers At Most N Given Digit Set (/problems/numbers-at-most-n-given-digit-set)

963 Minimum Area Rectangle II (/problems/minimum-area-rectangle-ii)