Square Root of a Number [LeetCode](https://leetcode.com/problems/sqrtx/)

Given a positive integer x, find its square root with specified precision.

**Approach 1: Brute force approach to find the square root of a number**

The function sqrtBruteForce implements a brute force approach to find the square root of x.

It iterates from 1 to x and checks the square of each number. If the square matches x, it returns the number as the square root.

If the square is less than x, it updates the answer to the current number. If the square exceeds x, it breaks the loop.

**The time complexity of this approach is O(x), and the space complexity is O(1).**

**Approach 2: Binary search approach to find the square root of a number**

The function sqrt implements a binary search approach to find the square root of x.

It initializes low as 0 and high as x to define the search space.

It iteratively calculates the middle number (mid) using the binary search technique.

It checks the square of mid and compares it with x. If they are equal, mid is returned as the square root.

If the square is greater than x, the search is narrowed down to the lower half by updating high. If the square is less than x, the search is narrowed down to the upper half by updating low.

**The time complexity of this approach is O(log(x)), and the space complexity is O(1).**

**Function to find the precision part of the square root of number.**

The function findPrecision adjusts the precision of the square root found using one of the above approaches.

It takes the integer square root (intAns), the input number x, and the desired precision as input.

It iteratively adjusts the precision by dividing the factor by 10 at each iteration.

It then performs a loop to find the square root with the updated precision by incrementing ans with factor until the square exceeds or equals x.

**The time complexity of this function depends on the precision specified. If the precision is a constant, the time complexity is O(precision), where precision is the number of decimal places desired. The space complexity is O(1).**