Question Set 6: Advanced Number Problems

Note: Concentrate on Naming Conventions, Readability and Reusability of Functions
Try to find as many Alternate Solutions as possible.

1. Given an integer N, check if the given number N is a power of 4.
2. Given an integer N, check if the given number N is a power of K.
3. Check whether the given number is Armstrong number or not (153, 371, 1634 are Armstrong numbers)
4. Find the number of Armstrong Numbers in the given interval between X and Y.
5. Check if a given number is a perfect square or not
6. Find the sum of all perfect squares less than N
7. Given a number find the next perfect square
8. Given a number find the previous perfect square
9. Given a number find the nearest perfect square
10. Given a number find the nearest Armstrong number
11. Given a number find the next Armstrong number
12. Given a number find the next palindrome number
13. Given a number find the previous palindrome number
14. Given a number find the nearest palindrome number
15. Given a number find the K^{th} perfect square from that number
16. Given a number find the K^{th} Armstrong number from that number
17. Given a number find the K^{th} palindrome number from that number
18. Given n, write a program to print all the n-digit Armstrong numbers (n>=3)