Different types of numbers :-

1) Twisted Prime  number : is a number which is prime when read backwards and frontwards.

  For Example : 13 is a twisted-prime number since 13 and 31 both are prime numbers.

First few Twisted-prime Numbers are : 13, 17, 31, 37, 71, 73, 79, 97, 107, 113, 149, 157, 167, 179, 199, 311, 337, 347, 359, 389, 701, 709, 733, 739, 743, 751, 761, 769, 907, 937, 941, 953, 967, 971, 983, 991...

2) Niven Number : is an integer that is divisible by the sum of its digits.

   For Example :-

The number 18 is a Niven number in base 10, because the sum of the digits 1 and 8 is 9 (1 + 8 = 9), and 18 is divisible by 9 (since 18 % 9 = 0)

The number 1729 is a Niven number in base 10, because the sum of the digits 1 ,7, 2 and 9 is 19 (1 + 7 + 2 + 9 = 19), and 1729 is divisible by 19 (1729 = 19 \* 91)

The number 19 is not a Niven number in base 10, because the sum of the digits 1 and 9 is 10 (1 + 9 = 10), and 19 is not divisible by 10 (since 19 % 10 = 9)

The first few Niven numbers in base 10 are:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 18, 20, 21, 24, 27, 30, 36, 40, 42, 45, 48, 50, 54, 60, 63, 70, 72, 80, 81, 84, 90, 100, 102, 108, 110, 111, 112, 114, 117, 120, 126, 132, 133, 135, 140, 144, 150, 152, 153, 156, 162, 171, 180, 190, 192, 195, 198, 200 etc.

3) Pronic Number : A pronic number, oblong number, rectangular number or heteromecic number, is a number which is the product of two consecutive integers, that is, n (n + 1).

The first few pronic numbers are:

0, 2, 6, 12, 20, 30, 42, 56, 72, 90, 110, 132, 156, 182, 210, 240, 272, 306, 342, 380, 420, 462 … etc.

4)Armstrong Number : A number will be called Armstrong if sum of its digits powered with their respective position is equal to the original number.

For example 135 is a Armstrong

(Workings 11+32+53 = 135, some other Armstrong are 89, 175, 518 etc)

5) Automorphic Number : An automorphic number is a number which is present in the last digit(s) of its square.

Example: 25 is an automorphic number as its square is 625 and 25 is present as the last digits.

Few more Automorphic Numbers are : 52 = 25, 62 = 36, 762 = 5776, and 8906252 = 793212890625, so 5, 6, 76 and 890625 are all automorphic numbers.

-Source : Guide For School

6) Palindrome Number : A number is said to be a palindrome number when is reverse is equal to the number itself. In other words, it is the same if you read it from left to right or vice-versa OR it is a number that remains the same when its digits are reversed. Like 16461, for example, it is "symmetrical".

Example : 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 22, 33, 44, 55, 66, 77, 88, 99, 101, 111, 121, 131, 141, 151, 161, 171, 181, 191, 202,303,404,414,595,1001,1771....and so on.

7) Special Number : A number is said to be special number when the sum of factorial of its digits is equal to the number itself.

Example : 145 is a Special Number as 1!+4!+5!=145.

8) Duck number : A Duck number is a number which has zeroes present in it, but there should be no zero present in the beginning of the number.

For example : 3210, 7056, 8430709 are all duck numbers whereas 08237, 04309 are not.

9) Smith Number : A  Smith number is a composite number, the sum of whose digits is the sum of the digits of its prime factors obtained as a result of prime factorisation (excluding 1). The first few such numbers are 4, 22, 27, 58, 85, 94, 121 ………………..

Examples:

1.  666

Prime factors are 2, 3, 3, and 37

Sum of the digits are (6+6+6) = 18

Sum of the digits of the factors (2+3+3+(3+7)) = 18

2.   4937775

Prime factors are 3, 5, 5, 65837

Sum of the digits are (4+9+3+7+7+7+5) = 42

Sum of the digits of the factors (3+5+5+(6+5+8+3+7)) = 42

11) Prime Palindrome : A prime palindrome integer is a positive integer (without leading zeros) which is prime as well as a palindrome.

For Example : 2, 3, 5, 7, 11, 101, 131, 151, 181, 191, 313, 353, 373, 383, 727, 757, 787, ...and so on.

12) Fibonacci series Number : The number belonging to Fibonacci Series.

    Fibonacci series is the series in which except first two integers, the sum of       the two consecutive numbers is the third number.

First few terms of this series are : 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, ...

13) Amicable Number : If two numbers are such that the sum of the perfect divisors of one number is equal to the other number and the sum of the perfect divisors of  the other number is equal to the first number, then the numbers are called Amicable Numbers.

Example : 220 and 284.

14) The International Standard Book Number (ISBN) : is a unique numeric book identifier which is printed on every book. The ISBN is based upon a 10-digit code. The ISBN is legal if:

1xdigit1 + 2xdigit2 + 3xdigit3 + 4xdigit4 + 5xdigit5 + 6xdigit6 + 7xdigit7 + 8xdigit8 + 9xdigit9 + 10xdigit10 is divisible by 11.

Example: For an ISBN 1401601499

Sum=1×1 + 2×4 + 3×0 + 4×1 + 5×6 + 6×0 + 7×1 + 8×4 + 9×9 + 10×9 = 253 which is divisible by 11.

15) Composite Number : A number is said to be a composite, if it

has one or more then one factors excluding 1 and the number itself.

Example : 4,6,8,9...

16) Circular Prime Number : A circular prime is a prime number with the property that the number generated at each intermediate step when cyclically permuting its (base 10) digits will be prime.For example, 1193 is a circular prime, since 1931, 9311 and 3119 all are also prime. A circular prime with at least two digits can only consist of combinations of the digits 1, 3, 7 or 9, because having 0, 2, 4, 6 or 8 as the last digit makes the number divisible by 2, and having 0 or 5 as the last digit makes it divisible by 5. The complete listing of the smallest representative prime from all known cycles of circular primes  is 2, 3, 5, 7, 13, 17, 37, 79, 113, 197, 199, 337, 1193, 3779, 11939, 19937, 193939, 199933.

17) Happy Number : If a number is happy, then all members of its sequence are happy; if a number is unhappy, all members of the sequence are unhappy.

For example, 19 is happy, as the associated sequence is:

12 + 92 = 82

82 + 22 = 68

62 + 82 = 100

12 + 02 + 02 = 1.

The 143 happy numbers up to 1,000 are:

1, 7, 10, 13, 19, 23, 28, 31, 32, 44, 49, 68, 70, 79, 82, 86, 91, 94, 97, 100, 103, 109, 129, 130, 133, 139, 167, 176, 188, 190, 192, 193, 203, 208, 219, 226, 230, 236, 239, 262, 263, 280, 291, 293, 301, 302, 310, 313, 319, 320, 326, 329, 331, 338, 356, 362, 365, 367, 368, 376, 379, 383, 386, 391, 392, 397, 404, 409, 440, 446, 464, 469, 478, 487, 490, 496, 536, 556, 563, 565, 566, 608, 617, 622, 623, 632, 635, 637, 638, 644, 649, 653, 655, 656, 665, 671, 673, 680, 683, 694, 700, 709, 716, 736, 739, 748, 761, 763, 784, 790, 793, 802, 806, 818, 820, 833, 836, 847, 860, 863, 874, 881, 888, 899, 901, 904, 907, 910, 912, 913, 921, 923, 931, 932, 937, 940, 946, 964, 970, 973, 989, 998, 1000.