

1) Strong number for example 145 is a strong number

$$1! + 4! + 5! = 1 + 24 + 120 = 145.$$

2) Perfect number that is equal to the sum of its own

strong numbers:

```
#include<stdio.h>
```

```
int factorial (int n){
```

```
    int fact = 1;
```

```
    for (int i=1; i<=n; i++)
```

```
        fact *= i;
```

```
    return fact;
```

```
}
```

```
int main () {
```

```
    int num , temp , sum = 0;
```

```
    printf ("Enter a number: ");
```

```
    scanf ("%d" , &num);
```

```
    temp = num;
```

```
    while (temp > 0) {
```

```
        int digit = temp % 10;
```

```
        sum += factorial (digit);
```

```
        temp /= 10;
```

```
}
```

```
    if (sum == num).
```

```
        printf ("%d is a strong number" , num);
```

```
    else
```

```
        printf ("%d is not a strong number" , num);
```

```
getch();
```

```
}
```

Perfect number:

```
#include<stdio.h>
```

```
#include<math.h>
```

```
#include<stdlib.h>
```

```
bool isPerfect(int n){
```

```
if (n<=1) return false;
```

```
int sum=1;
```

```
int r=(int)sqrt(n);
```

```
for (int d=2; d<=r; ++d){
```

```
if (n%d == 0){
```

```
sum+=d;
```

```
int other=n/d;
```

```
if (other != d) sum+=other;
```

```
}
```

```
}
```

```
return sum==n;
```

```
}
```

```
int main(){
```

```
int limit=10000;
```

```
printf("Perfect numbers up to %d : /n", limit);
```

```
for (int i=2; i<=limit; ++i){
```

```
if (isPerfect(i)) printf("%d, %d, %d",
```

```
return 0;
```