

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 proper divisors.

Strong number:

```
#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 <stdbool.h>
```

```
bool is_perfect (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 (is_perfect(i)) printf ("%d\n", i);
```

```
    }
```