

### All elements of Set in C++

```
#include <iostream>
using namespace std;
```

```
void set(int x) {
    for (int i = 0; i < 32; ++i) {
        if (x & (1 << i)) {
            cout << i << endl;
        }
    }
}
```

```
int main() {
    int x = 282; // Binary representation:
    100011010
    // int x = 7; // Binary representation:
    111

    set(x);

    return 0;
}
```

#### Binary of 282

Decimal: 282

Binary : 00000000 00000000 00000001 00011010

Bits :       ↑       ↑   ↑↑

Positions:   8       5   3 1 ← these are the set bits

#### 🔄 Loop Table

i (bit position)	1 << i (binary)	x & (1 << i)	Is Bit Set?	Output
0	000...0001	0	✗	-
1	000...0010	2	✓	1
2	000...0100	0	✗	-
3	000...1000	8	✓	3
4	000..1_0000	0	✗	-
5	000.10_0000	32	✓	5
6	000.100_0000	0	✗	-
7	001.000_0000	0	✗	-
8	010.000_0000	256	✓	8
...	...	0	✗	-
31	100...0000 (bit 31)	0	✗	-

#### ✓ Final Output

1  
3  
5  
8

Output:-

1  
3  
4  
8