All Divisors of a Number

I/p: n = 15
O/p: 1 3 5 15
I/p: n = 100
O/p: 1 2 4 5 10 20 25 50 100
I/p: n = 7
O/p: 1 7

```python
def printDivisors(n):
        for i in range(1, n + 1):
                if (n % i == 0):
                        print(i)

n = int(input("Enter n:\n"))
printDivisors(n)
```

Efficient Solution
1. Divisors always appear in pairs
   30: (1, 30), (2, 15), (3, 10), (5, 6)
2. One of the divisors in every pair
   is smaller than or equal to $\sqrt{n}$
   For a pair (x, y)
   x * y = n
   let x be the smaller, i.e., x ≤ y
   x * x ≤ n
   x ≤ $\sqrt{n}$

Efficient Solution
```python
def printDivisors(n):
        i = 1
        while (i * i <= n):
                if (n % i == 0):
                        print(i)
                        if (i != n/i):
                                print(n/i)
                i += 1
n = int(input("Enter n:\n"))
printDivisors(n)
```

Efficient Solution
```python
def printDivisors(n):
        i = 1
        while (i * i < n):
                if (n % i == 0):
                        print(i)
                i += 1
        while (i >= 1):
                if (n % i == 0):
                        print(n/i)
                i -= 1
n = int(input("Enter n:\n"))
printDivisors(n)
```