```
public static List<Integer> sieveOfEratosthenes(int n) {
   boolean[] prime = new boolean[n + 1];
   prime(i) true;
   for (int p = 2; p * p <= n; p++) {
       if (prime[p]) {
           for (int i = p * p; i <= n; i += p)
              prime[i] = false;
   List<Integer> primes = new ArrayList<>();
   for (int i = 2; i <= n; i++) {
       if (prime[i]) {
           primes.add(i);
   return primes;
}
```