1. Write a program that finds the least number with exactly 20 divisors. For the purposes of this problem, 1 counts as a divisor, but the number itself does not. For example, 10 has 3 divisors: 1, 2, and 5. The number 12 has 5 divisors: 1, 2, 3, 4, and 6. When the program is done running, it should print out the number it finds.

2. Write a program that asks the user for a string and prints it out in reverse, character by character.
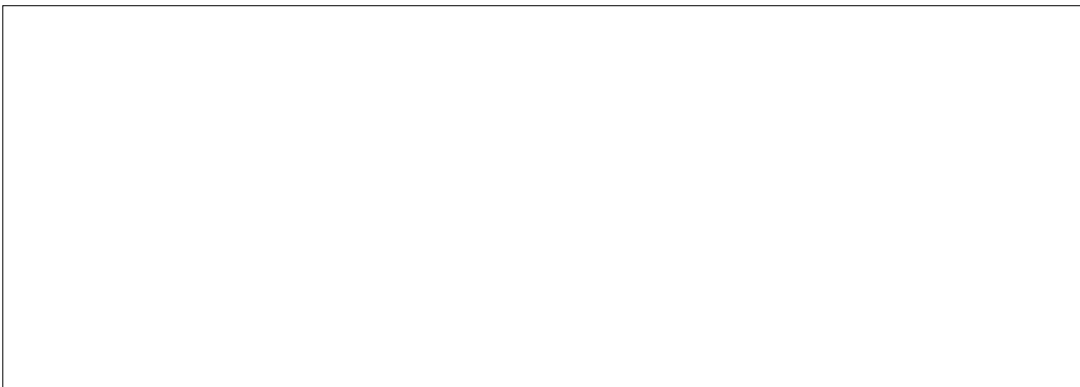
3. Write out what the following programs print.

a.
```java
public static void main(String[] args)
{
    int i;
    for(i = 2; i < 15; i += i - 1)
    {
        System.out.println(i);
    }
    System.out.println(i);
}
```
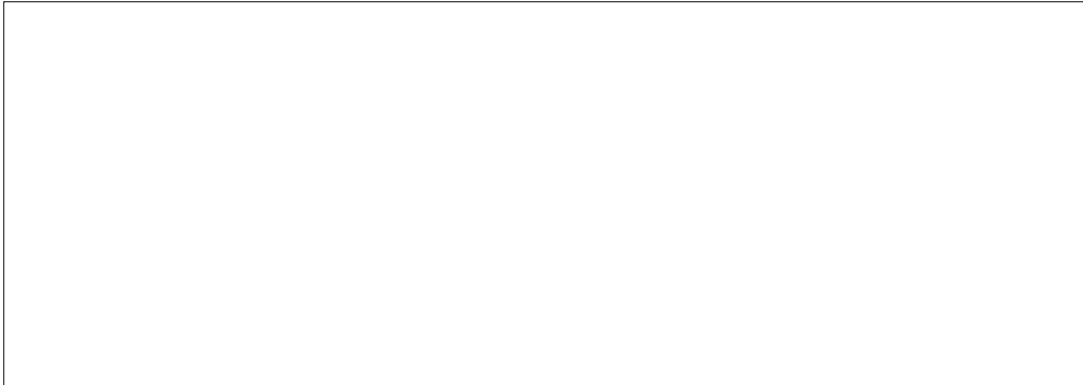
```
2
3
5
9
17
```

b.
```java
public static void main(String[] args)
{
    int j = 0;
    for(int i = 10; j < i; i--)
    {
        j++;
        System.out.println(2 * i + j);
    }
}
```

```
21
20
19
18
17
```

c.
```java
public static void main(String[] args)
{
    for(int num = 384950; num > 0; num /= 10)
    {
        System.out.println(num % 10);
    }
}
```

```
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```

d.
```java
public static void main(String[] args)
{
    int a = 14;
    int b = 1;

    while(b < 10)
    {
        System.out.println(a + ", " + b);

        int c = a % 7;
        b += c;
        a -= b;

        System.out.println(c);
    }

    System.out.println(a + ", " + b);
}
```

```
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```

e.
```java
public static void main(String[] args)
{
    int[] nums = new int[4];
    nums[0] = 13;
    nums[1] = 12;
    nums[2] = 15;
    nums[3] = 7;

    for(int i = 0; i < nums.length; i++)
    {
        int a = 0;
        while(nums[i] > 0)
        {
            if(nums[i] % 2 <= 0)
            {
                a++;
            }

            nums[i] /= 3;
            System.out.println(i + ": " + nums[i]);
        }

        System.out.println(a);
    }
}
```
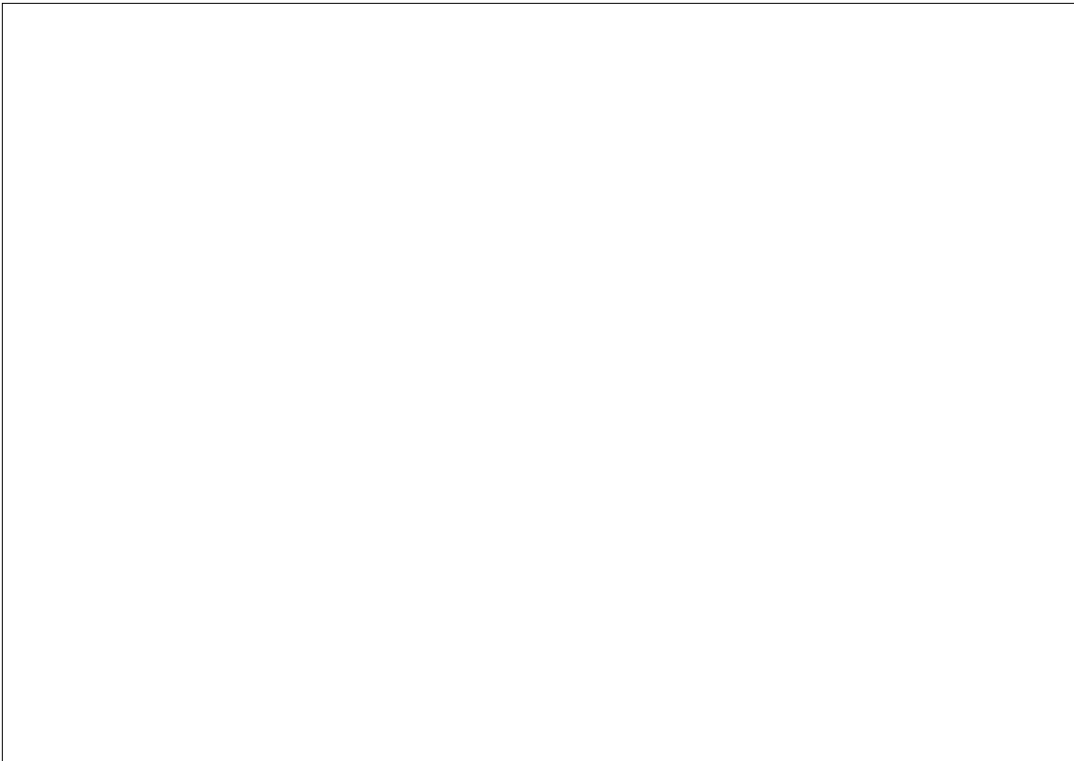
f.
```java
public static void main(String[] args)
{
    String str = "existential";

    System.out.println(str.length());

    for(int i = 0, j = str.length(); i <= j; i++, j--)
    {
        System.out.println(str.substring(i, j) + ".");
    }
}
```