```
public state is compute(String s) {
if(s_equals("0")){
  return 0;
if(sequals("1")){
  return 1;
if (s.charAt(s.length()-1) == '0'){
    return 2 * compute(s.substring(0,s.length()-1));
if (s.charAt(s.length()-1) == '1'){
    return 1 + 2 * compute(s.substring(0,s.length()-1));
return -1;
```