```cpp
const int MAXN = 200010;
const int LOGMAXN = 20;
int p[LOGMAXN][MAXN];
int sa[MAXN];
int step;
pair<pii,int> vaux[MAXN];
string s;

void calcsa() {
    int n = s.size();
    FOR0(i,n) p[0][i] = s[i];
    if(n==1) p[0][0] = 0;
    int pot;
    for(step=1,pot=2; pot<2*n; ++step, pot*=2) {
        FOR0(i,n) {
            vaux[i].first.first = p[step-1][i];
            vaux[i].first.second =  (i+pot/2 < n ? p[step-1][i+pot/2] : -1);
            vaux[i].second = i;
        }
        sort(vaux,vaux+n);
        int id = 0;
        FOR0(i,n) {
            if(i && vaux[i].first != vaux[i-1].first) ++id;
            p[step][vaux[i].second] = id;
        }
    }
    --step;
    FOR0(i,n) {
        sa[p[step][i]] = i;
    }
}

int lcp(int x, int y) {
    int n = s.size();
    if(x==y) return n-x;
    int ans = 0;
    for(int i=step; i>=0; --i) {
        if(p[i][x]==p[i][y]) {
            ans |= (1<<i);
            x += (1<<i);
            y += (1<<i);
            if(x>=n || y>=n) break;
        }
    }
    return ans;
}

int main() {
    NSYNC;
    cin >> s;
    reverse(s.begin(),s.end());
    calcsa();
    int q;
    cin >> q;
    int n = s.size();
    while(q--) {
        int x;
        cin >> x;
        cout << lcp(0,n-x) << endl;
    }
    return 0;
}

```