

This is uncomputable. Assume for the sake of contradiction that it is computable, so that there exists a Turing machine M^5 that computes L^5 . We can use M^5 to decide the halting problem. The halting problem asks whether a Turing machine M halts on input x . When given such an M and input x , we construct a new Turing machine M_{new} that for four inputs excluding x , we make M_{new} always output 1 on them. For input x , we make it output 1 if M outputs either 1 or 0. M_{new} on inputs other than these five output 0. We now input M_{new} into M^5 . If and only if M^5 outputs 1, then M halts on x . This decides the halting problem, which we know to be uncomputable, so we've reached a contradiction. Thus, L^5 is uncomputable.

M_{new} pseudocode:

```
M_new(M,x){
    randomly select 4 inputs that are not x as x2, x3, x4, and x5;
    if (x==x2 || x==x3 || x==x4 || x==x5){
        return 1;
    }
    else if (x!=x){
        return 0;
    }
    M(x);
    return 1;
}
```