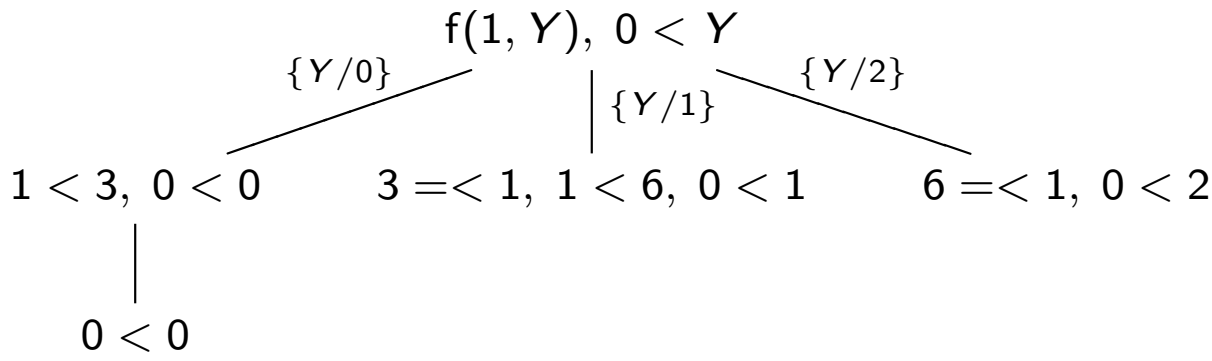
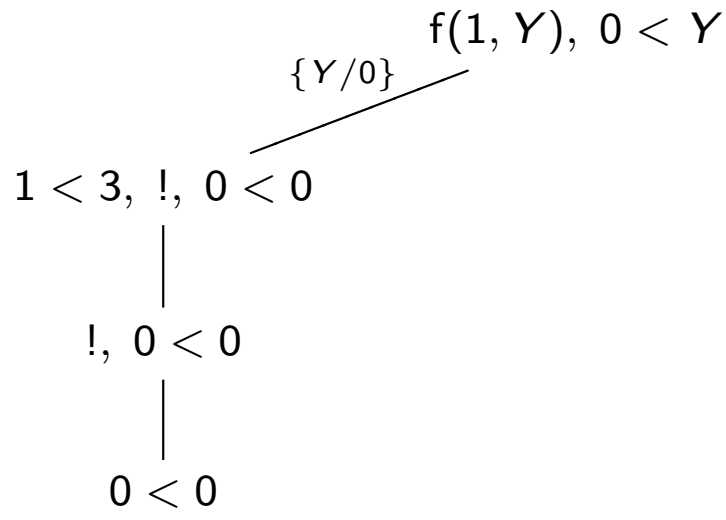
Program with cuts

```
f(X,0) :- X<3.
f(X,1) :- 3=<X, X<6.
f(X,2) :- 6=<X.
```




```
f(X,0) :- X<3, !.
f(X,1) :- 3=<X, X<6, !.
f(X,2) :- 6=<X.
```



Program with cuts

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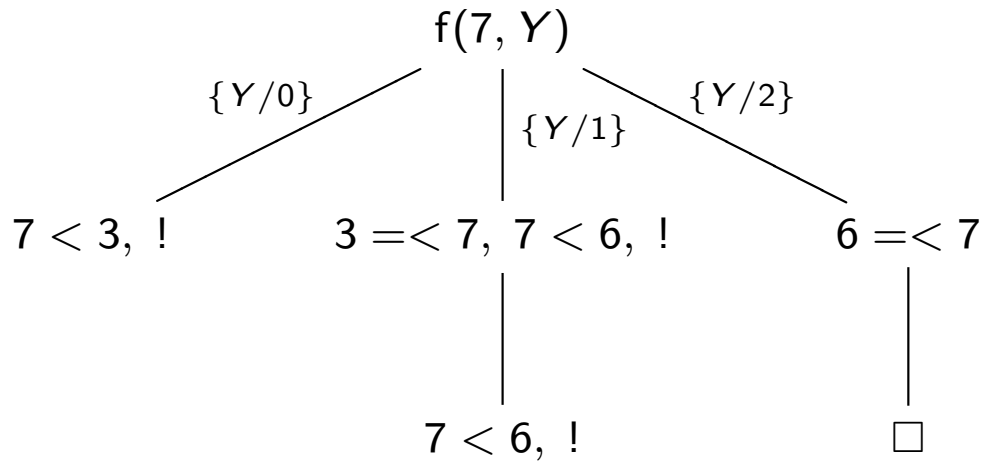
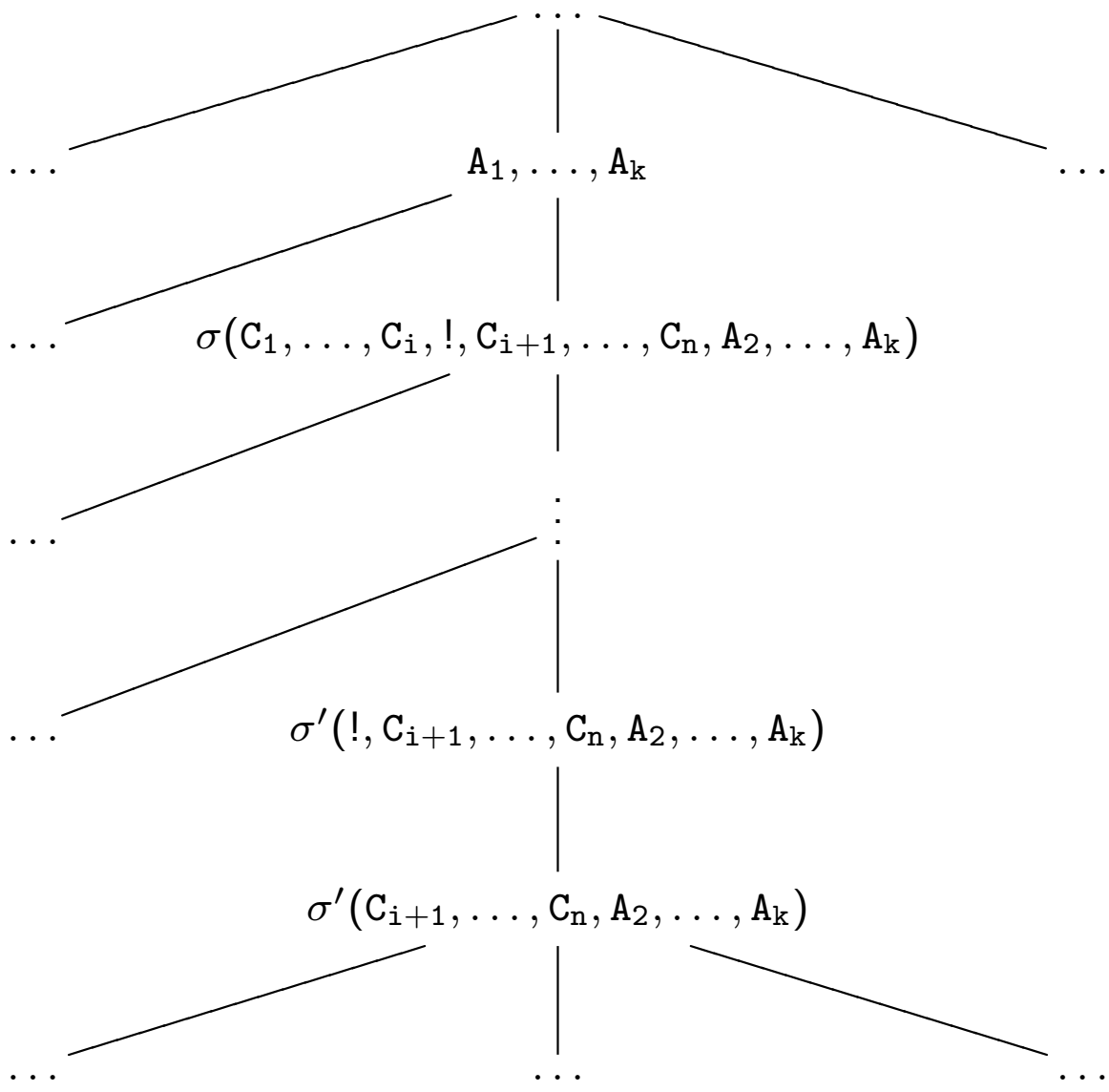
```




```
f(X,0) :- X<3, !.
f(X,1) :- X<6, !.
f(X,2).
```

Effect of cuts



Example without cut

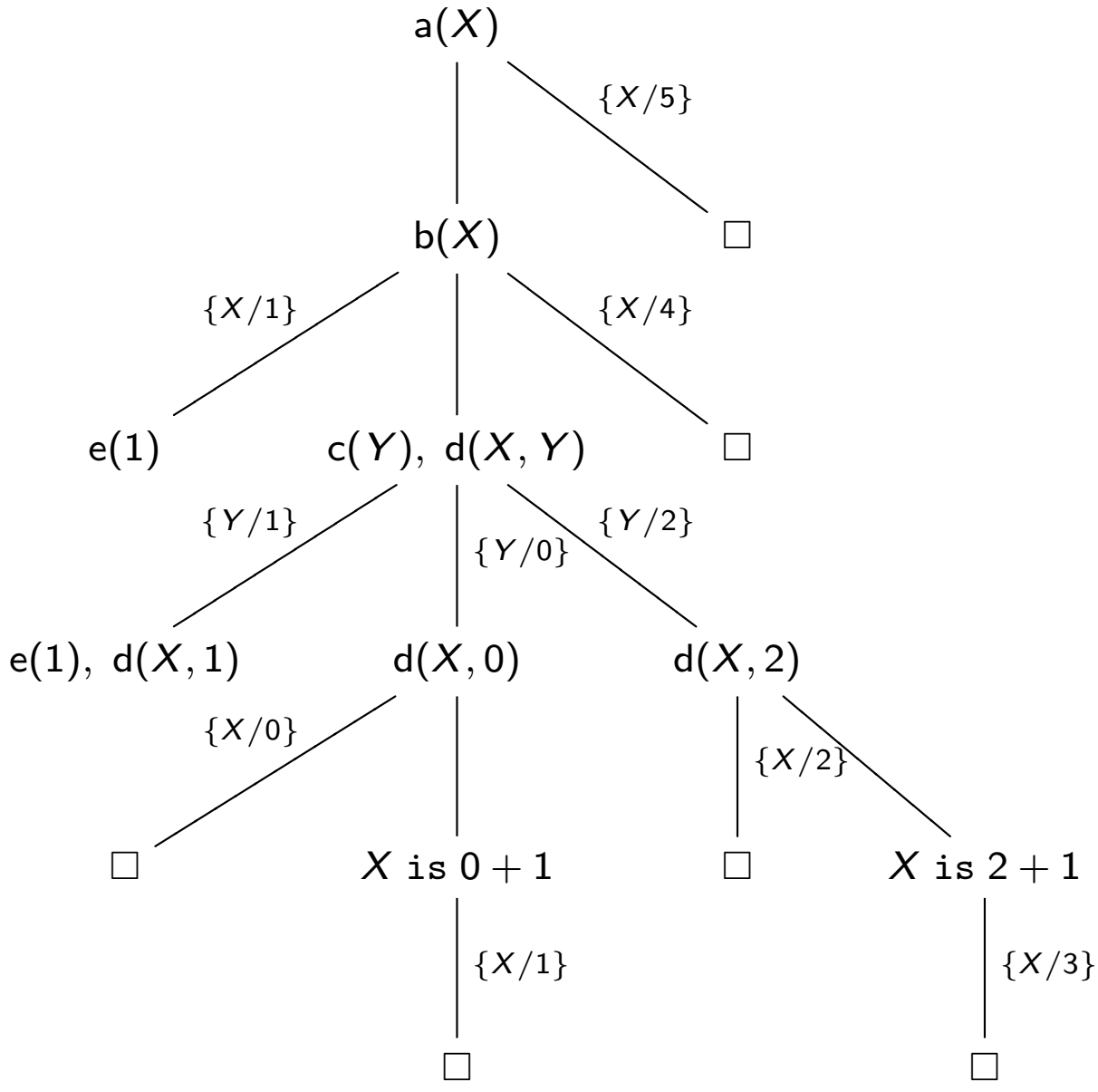
```
a(X) :- b(X).
a(5).

b(1) :- e(1).
b(X) :- c(Y), d(X,Y).
b(4).

c(1) :- e(1).
c(0).
c(2).

d(X,X).
d(X,Y) :- X is Y+1.

e(0).
```



Example with cut

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c(0).
c(2).

d(X,X).
d(X,Y) :- X is Y+1.

e(0).
```

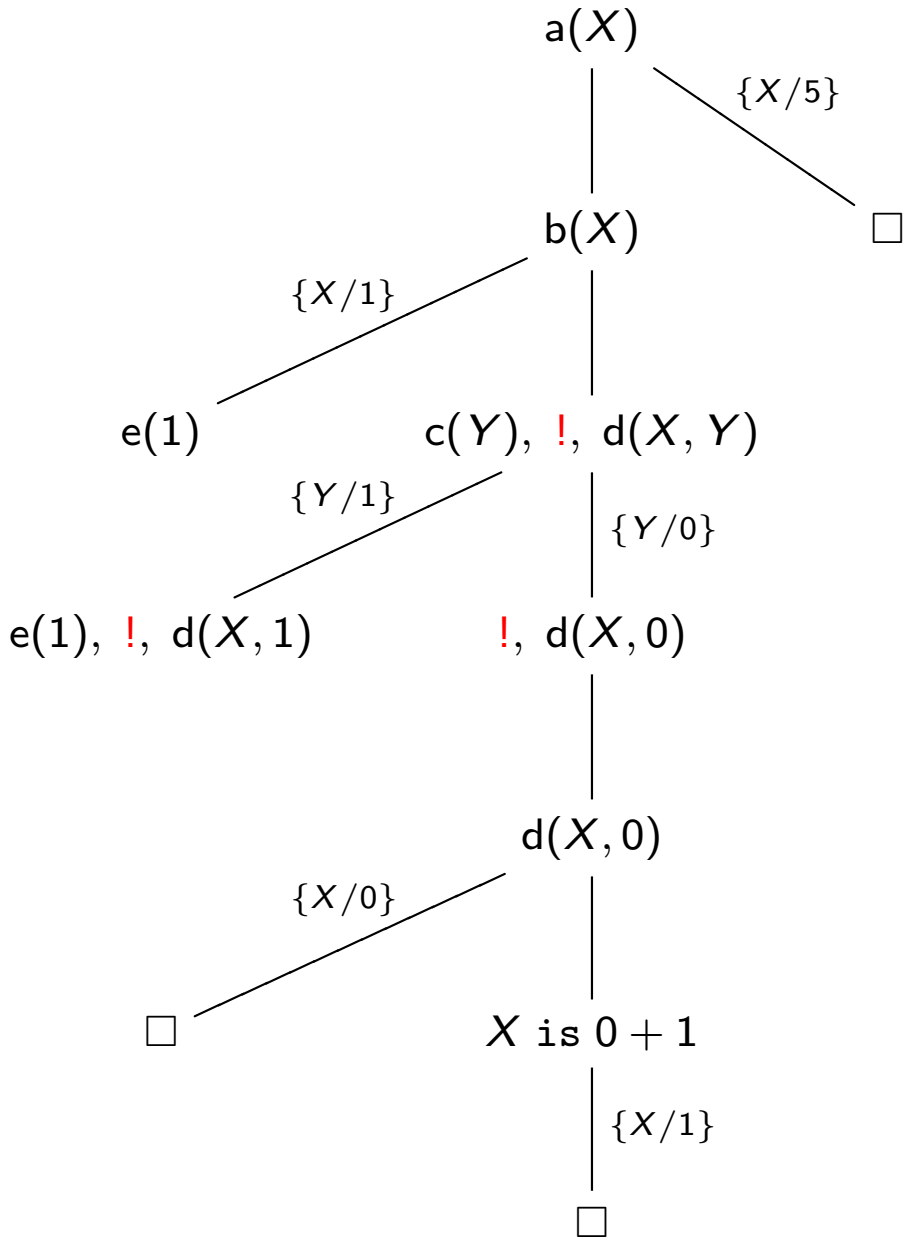

Programs with cuts

```
gcd(X,0,X).
gcd(0,X,X).
gcd(X,Y,Z) :- X =< Y, X > 0, Y1 is Y-X, gcd(X,Y1,Z).
gcd(X,Y,Z) :- Y < X, Y > 0, X1 is X-Y, gcd(X1,Y,Z).
```

```
gcd(X,0,X) :- !.
gcd(0,X,X) :- !.
gcd(X,Y,Z) :- X =< Y, !, Y1 is Y-X, gcd(X,Y1,Z).
gcd(X,Y,Z) :- X1 is X-Y, gcd(X1,Y,Z).
```

```
remove(_,[],[]).
remove(X,[X|Xs],Ys) :- !,remove(X,Xs,Ys).
remove(X,[Y|Xs],[Y|Ys]) :- remove(X,Xs,Ys).
```

Program with negation

```
even(0).
even(X) :- X1 is X-2, even(X1).
```

```
even(0).
even(X) :- X >= 2, X1 is X-2, even(X1).
```

```
even(0) :- !.
even(X) :- X > 0, !, X1 is X-1, not(even(X1)).
even(X) :- X1 is X+1, not(even(X1)).
```