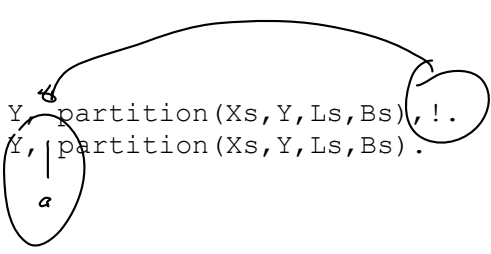1.
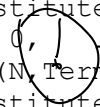
```
quicksort([X|Xs],Ys) ←
     partition(Xs,X,Littles,Bigs),
     quicksort(Littles,Ls),
     quicksort(Bigs,Bs),
     append(Ls,[X|Bs],Ys).
quicksort([ ],[ ]).

partition([X|Xs],Y,[X|Ls],Bs) ← X ≤ Y, partition(Xs,Y,Ls,Bs),!.
partition([X|Xs],Y,Ls,[X|Bs]) ← X > Y, partition(Xs,Y,Ls,Bs).
partition([ ],Y,[ ],[ ]).
```

2.

You can put a cut in this block of code:

```
substitute(N,Old,New,Term,Term1) :-
N > 0,
arg(N,Term,Arg),
substitute(Old,New,Arg,Arg1),!,
arg(N,Term1,Arg1),
N1 is N-1,
substitute(N1,Old,New,Term,Term1).
substitute(0,Old,New,Term,Term1).
```

Meaning the code does not have to find new arguments to replace the values
within substitute.

A cut-fail would not be necessary, as no form of negation can be found here
where X can be proven to be untrue.