

Output:

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```
#test 1
#(P^Q)<=>R : (Rv~P)v(Rv~Q)^(~RvP)^(~RvQ)
main()
```

Enter the kb:

Rv~P Rv~Q ~RvP ~RvQ

Enter the query:

R

Step	Clause	Derivation
1.	Rv~P	Given.
2.	Rv~Q	Given.
3.	~RvP	Given.
4.	~RvQ	Given.
5.	~R	Negated conclusion.
6.		Resolved Rv~P and ~RvP to Rv~R, which is in turn null.

A contradiction is found when ~R is assumed as true. Hence, R is true.

```
#test 2
#(P=>Q)=>Q, (P=>P)=>R, (R=>S)=>~(S=>Q)
main()
```

Enter the kb:

PvQ PvR ~PvR RvS Rv~Q ~Sv~Q

Enter the query:

R

Step	Clause	Derivation
1.	PvQ	Given.
2.	PvR	Given.
3.	~PvR	Given.
4.	RvS	Given.
5.	Rv~Q	Given.
6.	~Sv~Q	Given.
7.	~R	Negated conclusion.
8.	QvR	Resolved from PvQ and ~PvR.
9.	Pv~S	Resolved from PvQ and ~Sv~Q.
10.	P	Resolved from PvR and ~R.
11.	~P	Resolved from ~PvR and ~R.
12.	Rv~S	Resolved from ~PvR and Pv~S.
13.	R	Resolved from ~PvR and P.
14.	S	Resolved from RvS and ~R.
15.	~Q	Resolved from Rv~Q and ~R.
16.	Q	Resolved from ~R and QvR.
17.	~S	Resolved from ~R and Rv~S.
18.		Resolved ~R and R to ~RvR, which is in turn null.

A contradiction is found when ~R is assumed as true. Hence, R is true.