

```

Paradox,version3.0,2008-07-29.
+++PROBLEM:mt\tptp\rt13.all.tptp
Reading
'mt\tptp\rt13.all.tptp'...OK
+++SOLVING:mt\tptp\rt13.all.tptp
domainsize13
+++BEGINMODEL
SZSoutputstartFiniteModelfor
mt\tptp\rt13.all.tptp
%domainsizeis13
fof(domain,fi_domain,
(![X]:(X="1"|X="2"|X=
"3"|X="4"|X="5"|X="6"
|X="7"|X="8"|X="9"|X
="10"|X="11"|X="12"|X=
"13")))
).

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SZSoutputendFiniteModelfor
mt\tptp\rt13.all.tptp
+++ENDMODEL
+++RESULT:Satisfiable
SZSstatusSatisfiablefor
mt\tptp\rt13.all.tptp

```

```

fof(c,fi_predicates,
(c("1","1")=>$true
&c("1","2")=>$true
&c("1","3")=>$true
&c("1","4")=>$true
&c("1","5")=>$true
&c("1","6")=>$false
&c("1","7")=>$false
&c("1","8")=>$true
&c("1","9")=>$true
&c("1","10")=>$true
&c("1","11")=>$true
&c("1","12")=>$true
&c("1","13")=>$true
&c("2","1")=>$true
&c("2","2")=>$true
&c("2","3")=>$true
&c("2","4")=>$false
&c("2","5")=>$true
&c("2","6")=>$false
&c("2","7")=>$false
&c("2","8")=>$false
&c("2","9")=>$false
&c("2","10")=>$false
&c("2","11")=>$true
&c("2","12")=>$true
&c("2","13")=>$true
&c("3","1")=>$true
&c("3","2")=>$true
&c("3","3")=>$true
&c("3","4")=>$true
&c("3","5")=>$true
&c("3","6")=>$true
&c("3","7")=>$true
&c("3","8")=>$true
&c("3","9")=>$true
&c("3","10")=>$true
&c("3","11")=>$true
&c("3","12")=>$true
&c("3","13")=>$true
&c("4","1")=>$true
&c("4","2")=>$false
&c("4","3")=>$true
&c("4","4")=>$true

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&c("4","5")=>$false
&c("4","6")=>$true
&c("4","7")=>$true
&c("4","8")=>$true
&c("4","9")=>$true
&c("4","10")=>$true
&c("4","11")=>$true
&c("4","12")=>$true
&c("4","13")=>$true
&c("5","1")=>$true
&c("5","2")=>$true
&c("5","3")=>$true
&c("5","4")=>$false
&c("5","5")=>$true
&c("5","6")=>$false
&c("5","7")=>$true
&c("5","8")=>$false
&c("5","9")=>$false
&c("5","10")=>$true
&c("5","11")=>$true
&c("5","12")=>$true
&c("5","13")=>$true
&c("6","1")=>$false
&c("6","2")=>$false
&c("6","3")=>$true
&c("6","4")=>$true
&c("6","5")=>$false
&c("6","6")=>$true
&c("6","7")=>$true
&c("6","8")=>$false
&c("6","9")=>$false
&c("6","10")=>$true
&c("6","11")=>$true
&c("6","12")=>$true
&c("6","13")=>$false
&c("7","1")=>$false
&c("7","2")=>$false
&c("7","3")=>$true
&c("7","4")=>$true
&c("7","5")=>$true
&c("7","6")=>$true
&c("7","7")=>$true
&c("7","8")=>$false
&c("7","9")=>$true
&c("7","10")=>$true
&c("7","11")=>$true
&c("7","12")=>$true
&c("7","13")=>$true
&c("8","1")=>$true
&c("8","2")=>$false
&c("8","3")=>$true
&c("8","4")=>$true
&c("8","5")=>$false
&c("8","6")=>$false
&c("8","7")=>$false
&c("8","8")=>$true
&c("8","9")=>$true
&c("8","10")=>$true
&c("8","11")=>$false
&c("8","12")=>$false
&c("8","13")=>$true
&c("9","1")=>$true
&c("9","2")=>$false
&c("9","3")=>$true
&c("9","4")=>$true

```

```

&c("9","5")=>$false
&c("9","6")=>$false
&c("9","7")=>$true
&c("9","8")=>$true
&c("9","9")=>$true
&c("9","10")=>$true
&c("9","11")=>$true
&c("9","12")=>$false
&c("9","13")=>$true
&c("10","1")=>$true
&c("10","2")=>$false
&c("10","3")=>$true
&c("10","4")=>$true
&c("10","5")=>$true
&c("10","6")=>$true
&c("10","7")=>$true
&c("10","8")=>$true
&c("10","9")=>$true
&c("10","10")=>$true
&c("10","11")=>$true
&c("10","12")=>$true
&c("10","13")=>$true
&c("11","1")=>$true
&c("11","2")=>$true
&c("11","3")=>$true
&c("11","4")=>$true
&c("11","5")=>$true
&c("11","6")=>$true
&c("11","7")=>$true
&c("11","8")=>$false
&c("11","9")=>$true
&c("11","10")=>$true
&c("11","11")=>$true
&c("11","12")=>$true
&c("11","13")=>$true
&c("12","1")=>$true
&c("12","2")=>$true
&c("12","3")=>$true
&c("12","4")=>$true
&c("12","5")=>$true
&c("12","6")=>$true
&c("12","7")=>$true
&c("12","8")=>$false
&c("12","9")=>$false
&c("12","10")=>$true
&c("12","11")=>$true
&c("12","12")=>$true
&c("12","13")=>$true
&c("13","1")=>$true
&c("13","2")=>$true
&c("13","3")=>$true
&c("13","4")=>$true
&c("13","5")=>$true
&c("13","6")=>$false
&c("13","7")=>$true
&c("13","8")=>$true
&c("13","9")=>$true
&c("13","10")=>$true
&c("13","11")=>$true
&c("13","12")=>$true
&c("13","13")=>$true
)).

```

```
fof(one,fi_functors,  
(one="3")).
```

```
fof(closure,fi_functors,  
(closure("1")="13"  
&closure("2")="5"  
&closure("3")="3"  
&closure("4")="10"  
&closure("5")="5"  
&closure("6")="7"  
&closure("7")="7"  
&closure("8")="9"  
&closure("9")="9"  
&closure("10")="10"  
&closure("11")="11"  
&closure("12")="11"  
&closure("13")="13"))).
```

```
fof(i,fi_functors,  
(i("1")="1"  
&i("2")="2"  
&i("3")="3"  
&i("4")="4"  
&i("5")="2"  
&i("6")="6"  
&i("7")="6"  
&i("8")="8"  
&i("9")="8"  
&i("10")="4"  
&i("11")="12"  
&i("12")="12"  
&i("13")="1"  
))).
```

```
fof(op,fi_predicates,  
(op("1")=<=>$true  
&op("2")=<=>$true  
&op("3")=<=>$true  
&op("4")=<=>$true  
&op("5")=<=>$false  
&op("6")=<=>$true  
&op("7")=<=>$false  
&op("8")=<=>$true  
&op("9")=<=>$false  
&op("10")=<=>$false  
&op("11")=<=>$false  
&op("12")=<=>$true  
&op("13")=<=>$false  
))).
```

```
fof(neg,fi_functors,  
(neg("1")="7"  
&neg("2")="10"  
&neg("3")="3"  
&neg("4")="5"  
&neg("5")="4"  
&neg("6")="13"  
&neg("7")="1"  
&neg("8")="11"  
&neg("9")="12"  
&neg("10")="2"  
&neg("11")="8"  
&neg("12")="9"  
&neg("13")="6"  
))).
```

```
fof(ec,fi_predicates,  
ec("5","7")=<=>$true  
&ec("5","10")=<=>$true  
&ec("7","9")=<=>$true  
&ec("7","13")=<=>$true  
&ec("9","11")=<=>$true  
)).
```

```
fof(wcont,fi_predicates,  
(wcont("5","9")=<=>$true  
)).
```

```
fof(o,fi_predicates,  
(o("1","6")=<=>$false  
&o("1","7")=<=>$false  
&o("2","4")=<=>$false  
&o("2","6")=<=>$false  
&o("2","7")=<=>$false  
&o("2","8")=<=>$false  
&o("2","9")=<=>$false  
&o("2","10")=<=>$false  
&o("4","2")=<=>$false  
&o("4","5")=<=>$false  
&o("5","4")=<=>$false  
&o("5","6")=<=>$false  
&o("5","7")=<=>$false  
&o("5","8")=<=>$false  
&o("5","9")=<=>$false  
&o("5","10")=<=>$false  
&o("6","1")=<=>$false  
&o("6","2")=<=>$false  
&o("6","5")=<=>$false  
&o("6","8")=<=>$false  
&o("6","9")=<=>$false  
&o("6","13")=<=>$false  
&o("7","1")=<=>$false  
&o("7","2")=<=>$false  
&o("7","5")=<=>$false  
&o("7","8")=<=>$false  
&o("7","9")=<=>$false  
&o("7","13")=<=>$false  
&o("8","2")=<=>$false  
&o("8","5")=<=>$false  
&o("8","6")=<=>$false  
&o("8","7")=<=>$false  
&o("8","11")=<=>$false  
&o("8","12")=<=>$false  
&o("9","2")=<=>$false  
&o("9","5")=<=>$false  
&o("9","6")=<=>$false  
&o("9","7")=<=>$false  
&o("9","11")=<=>$false  
&o("9","12")=<=>$false  
&o("10","2")=<=>$false  
&o("10","5")=<=>$false  
&o("11","8")=<=>$false  
&o("11","9")=<=>$false  
&o("12","8")=<=>$false  
&o("12","9")=<=>$false  
&o("13","6")=<=>$false  
&o("13","7")=<=>$false  
)).
```

```
fof(pp,fi_predicates,  
(pp("1","3")=<=>$true  
&pp("1","13")=<=>$true  
&pp("2","1")=<=>$true  
&pp("2","3")=<=>$true  
&pp("2","5")=<=>$true  
&pp("2","11")=<=>$true  
&pp("2","12")=<=>$true  
&pp("2","13")=<=>$true  
&pp("4","3")=<=>$true  
&pp("4","10")=<=>$true  
&pp("5","3")=<=>$true  
&pp("5","11")=<=>$true  
&pp("5","12")=<=>$true  
&pp("5","13")=<=>$true  
&pp("6","3")=<=>$true  
&pp("6","4")=<=>$true  
&pp("6","7")=<=>$true  
&pp("6","10")=<=>$true  
&pp("6","11")=<=>$true  
&pp("6","12")=<=>$true  
&pp("7","3")=<=>$true  
&pp("7","10")=<=>$true  
&pp("7","11")=<=>$true  
&pp("8","1")=<=>$true  
&pp("8","3")=<=>$true  
&pp("8","4")=<=>$true  
&pp("8","9")=<=>$true  
&pp("8","10")=<=>$true  
&pp("8","13")=<=>$true  
&pp("9","3")=<=>$true  
&pp("9","4")=<=>$true  
&pp("9","10")=<=>$true  
&pp("9","13")=<=>$true  
&pp("10","3")=<=>$true  
&pp("11","3")=<=>$true  
&pp("12","3")=<=>$true  
&pp("12","11")=<=>$true  
&pp("13","3")=<=>$true  
)).
```

```

fof(meet,fi_functors,
(meet("1","1")="1"
&meet("1","2")="2"
&meet("1","3")="1"
&meet("1","4")="8"
&meet("1","5")="2"
&meet("1","6")="6"
&meet("1","7")="9"
&meet("1","8")="8"
&meet("1","9")="8"
&meet("1","10")="8"
&meet("1","11")="2"
&meet("1","12")="2"
&meet("1","13")="1"
&meet("2","1")="2"
&meet("2","2")="2"
&meet("2","3")="2"
&meet("2","4")="7"
&meet("2","5")="2"
&meet("2","6")="2"
&meet("2","7")="2"
&meet("2","8")="13"
&meet("2","9")="2"
&meet("2","10")="1"
&meet("2","11")="2"
&meet("2","12")="2"
&meet("2","13")="2"
&meet("3","1")="1"
&meet("3","2")="2"
&meet("3","3")="3"
&meet("3","4")="4"
&meet("3","5")="5"
&meet("3","6")="6"
&meet("3","7")="7"
&meet("3","8")="8"
&meet("3","9")="9"
&meet("3","10")="10"
&meet("3","11")="11"
&meet("3","12")="12"
&meet("3","13")="13"
&meet("4","1")="8"
&meet("4","2")="7"
&meet("4","3")="4"
&meet("4","4")="4"
&meet("4","5")="9"
&meet("4","6")="6"
&meet("4","7")="6"
&meet("4","8")="8"
&meet("4","9")="9"
&meet("4","10")="4"
&meet("4","11")="6"
&meet("4","12")="6"
&meet("4","13")="9"
&meet("5","1")="2"
&meet("5","2")="2"
&meet("5","3")="5"
&meet("5","4")="9"
&meet("5","5")="5"
&meet("5","6")="11"
&meet("5","7")="9"
&meet("5","8")="13"
&meet("5","9")="10"
&meet("5","10")="13"
&meet("5","11")="5"
&meet("5","12")="5"

```

```

&meet("5","13")="5"
&meet("6","1")="1"
&meet("6","2")="6"
&meet("6","3")="6"
&meet("6","4")="6"
&meet("6","5")="11"
&meet("6","6")="6"
&meet("6","7")="6"
&meet("6","8")="9"
&meet("6","9")="3"
&meet("6","10")="6"
&meet("6","11")="6"
&meet("6","12")="6"
&meet("6","13")="9"
&meet("7","1")="5"
&meet("7","2")="5"
&meet("7","3")="7"
&meet("7","4")="6"
&meet("7","5")="5"
&meet("7","6")="6"
&meet("7","7")="7"
&meet("7","8")="2"
&meet("7","9")="5"
&meet("7","10")="7"
&meet("7","11")="7"
&meet("7","12")="6"
&meet("7","13")="7"
&meet("8","1")="8"
&meet("8","2")="4"
&meet("8","3")="8"
&meet("8","4")="8"
&meet("8","5")="3"
&meet("8","6")="1"
&meet("8","7")="5"
&meet("8","8")="8"
&meet("8","9")="8"
&meet("8","10")="8"
&meet("8","11")="1"
&meet("8","12")="2"
&meet("8","13")="8"
&meet("9","1")="8"
&meet("9","2")="7"
&meet("9","3")="9"
&meet("9","4")="9"
&meet("9","5")="2"
&meet("9","6")="13"
&meet("9","7")="7"
&meet("9","8")="8"
&meet("9","9")="9"
&meet("9","10")="9"
&meet("9","11")="8"
&meet("9","12")="9"
&meet("9","13")="9"
&meet("10","1")="8"
&meet("10","2")="4"
&meet("10","3")="10"
&meet("10","4")="4"
&meet("10","5")="5"
&meet("10","6")="6"
&meet("10","7")="7"
&meet("10","8")="8"
&meet("10","9")="9"
&meet("10","10")="10"
&meet("10","11")="7"
&meet("10","12")="6"

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&meet("10","13")="9"
&meet("11","1")="2"
&meet("11","2")="2"
&meet("11","3")="11"
&meet("11","4")="6"
&meet("11","5")="5"
&meet("11","6")="6"
&meet("11","7")="7"
&meet("11","8")="13"
&meet("11","9")="5"
&meet("11","10")="7"
&meet("11","11")="11"
&meet("11","12")="12"
&meet("11","13")="5"
&meet("12","1")="2"
&meet("12","2")="2"
&meet("12","3")="12"
&meet("12","4")="6"
&meet("12","5")="5"
&meet("12","6")="6"
&meet("12","7")="6"
&meet("12","8")="1"
&meet("12","9")="4"
&meet("12","10")="6"
&meet("12","11")="12"
&meet("12","12")="12"
&meet("12","13")="5"
&meet("13","1")="1"
&meet("13","2")="2"
&meet("13","3")="13"
&meet("13","4")="9"
&meet("13","5")="5"
&meet("13","6")="1"
&meet("13","7")="8"
&meet("13","8")="8"
&meet("13","9")="9"
&meet("13","10")="9"
&meet("13","11")="5"
&meet("13","12")="5"
&meet("13","13")="13"
)).

```