PREDEFINED

5.389 sum_powers4_ctr

DESCRIPTIONLINKS

Origin	Arithmetic constraint.
Constraint	sum_powers4_ctr(VARIABLES, CTR, VAR)
Synonyms	sum_powers4, sum_of_powers4, sum_of_powers4_ctr.

Arguments

```
VARIABLES  :  collection(var−dvar)
CTR        :  atom
VAR        :  dvar
```

Restrictions

required(VARIABLES, var)
CTR $\in [=, \neq, <, \geq, >, \leq]$

Purpose

Constraint the sum of the power of four of a set of domain variables. More precisely, let S denote the sum of the power of four of the variables of the VARIABLES collection (when the collection is empty the corresponding sum is equal to 0). Enforce the following constraint to hold: S CTR VAR.

Example

$(\langle 1, 1, 2 \rangle, =, 18)$

The sum_powers4_ctr constraint holds since the condition $1^4 + 1^4 + 2^4 = 18$ is satisfied.

Typical

$|\text{VARIABLES}| > 1$
range(VARIABLES.var) > 1
CTR $\in [=, <, \geq, >, \leq]$

Symmetry

Items of VARIABLES are permutable.

Arg. properties

- Contractible wrt. VARIABLES when CTR $\in [<, \leq]$.
- Extensible wrt. VARIABLES when CTR $\in [\geq, >]$.
- Aggregate: VARIABLES(union), CTR(id), VAR(+).

See also

common keyword: sum_ctr, sum_cubes_ctr, sum_powers5_ctr, sum_powers6_ctr, sum_squares_ctr *(sum)*.

Keywords

characteristic of a constraint: sum.

constraint type: predefined constraint, arithmetic constraint.