

**5.329 sum\_set**

	DESCRIPTION	LINKS	GRAPH
<b>Origin</b>	H. Cambazard		
<b>Constraint</b>	<code>sum_set(SV, VALUES, CTR, VAR)</code>		
<b>Arguments</b>	SV : svar VALUES : collection(val-int, coef-int) CTR : atom VAR : dvar		
<b>Restrictions</b>	<code>required(VALUES, [val, coef])</code> <code>distinct(VALUES, val)</code> VALUES.coef ≥ 0 CTR ∈ [=, ≠, <, ≥, >, ≤]		
<b>Purpose</b>	Let SUM denote the sum of the <code>coef</code> attributes of the <code>VALUES</code> collection for which the corresponding values <code>val</code> occur in the set <code>SV</code> . Enforce the following constraint to hold: SUM CTR VAR.		
<b>Example</b>	$\left( \begin{array}{l} \{2, 3, 6\}, \\ \left\langle \begin{array}{ll} \text{val} - 2 & \text{coef} - 7, \\ \text{val} - 9 & \text{coef} - 1, \\ \text{val} - 5 & \text{coef} - 7, \\ \text{val} - 6 & \text{coef} - 2 \end{array} \right\rangle, =, 9 \end{array} \right)$		
	The <code>sum_set</code> constraint holds since the sum of the <code>coef</code> attributes 7 + 2 for which the corresponding <code>val</code> attribute belongs to the first argument <code>SV = {2, 3, 6}</code> is equal (i.e., since <code>CTR</code> is set to =) to its last argument <code>VAR = 9</code> .		
<b>Symmetry</b>	Items of <code>VALUES</code> are <a href="#">permutable</a> .		
<b>See also</b>	<a href="#">common keyword</a> : <code>sum</code> , <code>sum_ctr</code> ( <i>sum</i> ).		
<b>Keywords</b>	<a href="#">characteristic of a constraint</a> : <code>sum</code> . <a href="#">constraint arguments</a> : binary constraint, constraint involving set variables. <a href="#">constraint type</a> : arithmetic constraint.		

<b>Arc input(s)</b>	VALUES
<b>Arc generator</b>	$SELF \mapsto \text{collection}(\text{values})$
<b>Arc arity</b>	1
<b>Arc constraint(s)</b>	$\text{in\_set}(\text{values.val}, SV)$
<b>Graph property(ies)</b>	$SUM(\text{VALUES}, \text{coef}) \text{ CTR VAR}$

**Graph model**

Parts (A) and (B) of Figure 5.593 respectively show the initial and final graph associated with the **Example** slot.

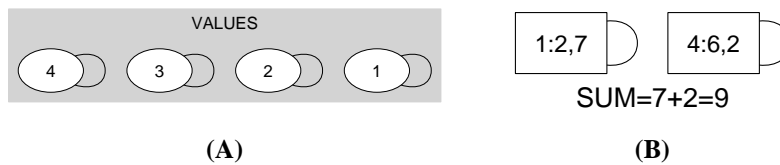


Figure 5.593: Initial and final graph of the `sum_set` constraint