5.269   multiple

Origin   Arithmetic.

Constraint $\texttt{multiple}(\texttt{X}, \texttt{Y}, \texttt{C})$

Arguments   X : dvar
                        Y : dvar
                        C : int

Restrictions $\texttt{X} \neq 0$
                        $\texttt{Y} \neq 0$
                        $\texttt{C} > 0$

Purpose   Enforce $\max(|\texttt{X}|, |\texttt{Y}|) = \texttt{C} \cdot \min(|\texttt{X}|, |\texttt{Y}|)$, (with $|\texttt{X}| \neq 0$ and $|\texttt{Y}| \neq 0$).

Example $(8, -2, 4)$

                        The $\texttt{multiple}$ constraint holds since $\max(|8|, |-2|) = 4 \cdot \min(|8|, |-2|)$.

Typical $\texttt{C} > 1$

Arg. properties   Functional dependency: C determined by X and Y.

Keywords   **constraint arguments:** binary constraint.

                        constraint type: predefined constraint, arithmetic constraint.

                        modelling: functional dependency.