Input: Matrices G, S, W

Output: Dimension $n' \leq n$ of the smallest affine subspace $\mathcal{K}$ that contains K^* if $n' < n$, then $\mathcal{K} = \{x \in \mathbb{R}^n \; Tx = Z\}$

discard the true inequalities from the constraints in (1.12);

if no inequality is left **then** $\mathcal{K} \leftarrow \mathbb{R}^n$;

else

  let $\mathcal{P}_a \triangleq \{(z, x) : \; G_a z - S_a x = W_a\}$ be the affine subspace obtained by collecting the remaining non-true inequalities;

  let $\{u_1, \ldots, u_{k'}\}$ be a basis of the kernel of G_a';

  if $k' = 0$ **then** $\mathit{\Pi}_{\mathbb{R}^n}(\mathcal{P}_a)$ and (by Proposition (1.1)) K^* are full-dimensional, $\mathcal{K} \leftarrow \mathbb{R}^n$;

  else $\mathcal{K} \leftarrow \{x | \; Tx = Z\}$, where

$$T = -\begin{bmatrix} u_1' \\ \vdots \\ u_{k'}' \end{bmatrix} S_a, \; Z = \begin{bmatrix} u_1' \\ \vdots \\ u_{k'}' \end{bmatrix} W_a;$$

end .