Algorithm 1: Algorithm : Finding Pivot Variables $\exists Y F(X,Y)$

PivotVars={ ϕ}
for y_i *in* Y **do**
  $\psi \leftarrow F(X,Y)|_{y_i=0} \wedge \neg F(X,Y)|_{y_i=1}$
  while *True* **do**
    $ret, \sigma \leftarrow$ CheckSAT(ψ)
    if *ret is 0* **then**
      PivotVars $\leftarrow$ PivotVars $\cup y_i$
      return
    end
    else
      HardConstraint
       $\leftarrow F(X,Y) \wedge (X \leftrightarrow \sigma[X]) \wedge (y_i \leftrightarrow 1) \wedge \bigwedge_{j<i} (y_j \leftrightarrow \sigma[y_j])$
      SoftConstraint $\leftarrow \forall_{j>i}(y_j \leftrightarrow \sigma[y_j])$
      ind, $\Pi \leftarrow$ MaxSATCall(HardConstraint,SoftConstraint)
      `/* ind are the Y variables for which the maxsat had to drop the soft constraint */`
      $\psi \leftarrow \psi \wedge \neg(F(X,Y')|_{y'_i=1} \wedge (\bigwedge_{y' \in ind} y' = \neg y) \wedge (\bigwedge_{y' \in Y/ind} y' = y))$
    end
  end
end