$$\sigma = (\forall X.\exists Y.R(X,Y)) \Rightarrow \exists Y.\forall X.R(X,Y)$$

$$\begin{aligned}
\neg\sigma &= \neg((\forall X.\exists Y.R(X,Y)) \Rightarrow \exists Y.\forall X.R(X,Y)) \\
&= \neg(\neg(\forall X.\exists Y.R(X,Y)) \vee \exists Y.\forall X.R(X,Y)) \\
&= (\forall X.\exists Y.R(X,Y)) \wedge \neg\exists Y.\forall X.R(X,Y) \\
&= (\forall X.\exists Y.R(X,Y)) \wedge \forall Y.\exists X.\neg R(X,Y) \\
&= (\forall X.\exists Y.R(X,Y)) \wedge \forall Z.\exists W.\neg R(W,Z) \\
&= \forall X.\exists Y.\forall Z.\exists W.(R(X,Y) \wedge \neg R(W,Z)) \\
&= \forall X.\forall Z.(R(X,F(X)) \wedge \neg R(g(X,Z),Z)) \\
&= \{\underset{1}{\{R(X,F(X))\}}, \underset{2}{\{\neg R(g(X,Z),Z)\}}\} = C
\end{aligned}$$

Renombrar variables!!

$$\begin{aligned}
1 \text{ y } 2: \quad & \text{mgu}\{R(X,F(X)) \doteq R(g(X',Z),Z)\} \\
&= \text{mgu}\{X \doteq g(X',Z),\ F(X) \doteq Z\} && \text{decompose} \\
&= \text{mgu}\{F(g(X',Z)) \doteq Z\} && \text{elim}\{X := g(X',Z)\} \\
&= \text{mgu}\{Z \doteq F(g(X',Z))\} && \text{swap} \\
&= \text{Falla por Occurs-check}
\end{aligned}$$

No se puede unificar 1 y 2. Como no hay ninguna otra cláusula en C para aplicar la regla de resolución, C resulta satisfacible.

$\therefore$ σ es inválida