Example 39 *Consider the formula*

$$A = \exists z(\exists x Q(x,z) \vee \exists x P(x)) \rightarrow \neg(\neg\exists x P(x) \wedge \forall x \exists z Q(z,x)).$$

from example 35.

1. *Transforming A to a prenex CNF:*

   $$A \equiv \forall z \forall x \exists y \forall w((\neg Q(x,z) \vee P(y) \vee \neg Q(w,y)) \wedge (\neg P(x) \vee P(y) \vee \neg Q(w,y))).$$

2. *Skolemize all existential quantifiers:*

   $\mathrm{Skolem}(A) =$

   $$\forall z \forall x \forall w((\neg Q(x,z) \vee P(f(z,x)) \vee \neg Q(w,f(z,x))) \wedge (\neg P(x) \vee P(f(z,x)) \vee \neg Q(w,f(z,x)))).$$

3. *Remove all universal quantifiers and write the matrix as a set of clauses:*

   $$\mathrm{clausal}(A) = \{\neg Q(x,z), P(f(z,x)), \neg Q(w,f(z,x))\}, \{\neg P(x), P(f(z,x)), \neg Q(w,f(z,x))\}.$$