Try it!

Given: $p \vee q$, $(r \wedge s) \rightarrow \neg q$, r.
Show: $s \rightarrow p$

Eliminate ∧	$A \wedge B$	$\therefore A, B$
Eliminate ∨	$A \vee B, \neg A$	$\therefore B$
Intro ∧	$A; B$	$\therefore A \wedge B$
Intro ∨	A	$\therefore A \vee B, B \vee A$
Direct Proof rule	$A \Rightarrow B$	$A \rightarrow B$
Modus Ponens	$P \rightarrow Q; P$	$\therefore Q$

You can still use all the propositional logic equivalences too!

Proof Using Quantifiers

Suppose we know $\exists x P(x)$ and $\forall y[\, P(y) \rightarrow Q(y)]$. Conclude $\exists x Q(x)$.

Intro ∃	$P(c)$ for some c	$\therefore \exists x\, P(x)$
Eliminate ∃	$\exists x P(x)$	$\therefore P(c)$ for a fresh c
Eliminate ∀	$\forall x\, P(x)$	$\therefore P(a)$ for any a
Intro ∀	$P(a)$; a is arbitrary	$\therefore \forall x\, P(x)$

Arbitrary

In section, you said: $[\exists y \forall x\ P(x, y)] \rightarrow [\forall x \exists y\ P(x, y)]$. Let's prove it!!

Find The Bug

Let your domain of discourse be integers.
We claim that given $\forall x \exists y$ $\texttt{Greater}(y, x)$, we can conclude $\exists y \forall x$ $\texttt{Greater}(y, x)$
Where $\texttt{Greater}(y, x)$ means $y > x$

1.	$\forall x \exists y\ \texttt{Greater}(y, x)$	Given
2.	Let a be an arbitrary integer	--
3.	$\exists y\ \texttt{Greater}(y, a)$	Elim ∀ (1)
4.	$\texttt{Greater}(b, a)$	Elim ∃ (2)
5.	$\forall x\ \texttt{Greater}(b, x)$	Intro ∀ (4)
6.	$\exists y \forall x\ \texttt{Greater}(y, x)$	Intro ∃ (5)