

Problem 7.2

Given $\forall x. \forall y. p(x, y)$, use the Fitch system to prove $\forall x. \exists y. p(x, y)$.

To apply a rule of inference, check the lines you wish to use as premises and click the button for the rule of inference. Reiteration allows you to repeat an earlier item. To delete one or more lines from a proof, check the desired lines and click Delete.

Whenever entering expressions, use Ascii characters only. Use \sim for \neg ; use $\&$ for \wedge ; use $|$ for \vee ; use \Rightarrow for \Rightarrow ; use \forall for \forall ; use \exists for \exists ; and use $:$ for $:$ in quantified sentences. Also, for variables use strings of alphanumeric characters that begin with a capital letter. For example, to write the sentence $\forall x. \exists y. (p(x) \wedge q(y) \Rightarrow r(y) \wedge \neg s(y))$, write $\forall x : \exists y : (p (X) \& q (Y) \Rightarrow r (Y) | \sim s (Y))$.

Proof Editor		
1.	AX:AY:p(X,Y)	Premise
2.	AY:p(X,Y)	Universal Elimination: 1
3.	p(X,Y)	Universal Elimination: 2
4.	EY:p(X,Y)	Existential Introduction: 3
5.	AX:EYp(X,Y)	Universal Introduction: 4
Goal	AX:EYp(X,Y)	Complete Submit
<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Assumption</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Negation Introduction</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Implication Introduction</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Universal Introduction</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Reiteration</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Negation Elimination</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Implication Elimination</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Universal Elimination</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Delete</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">And Introduction</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Biconditional Introduction</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Existential Introduction</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">And Elimination</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Biconditional Elimination</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Existential Elimination</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Or Introduction</div> <div style="border: 1px solid #ccc; padding: 2px 5px; margin: 2px;">Or Elimination</div> </div> <div style="display: flex; justify-content: center; margin-top: 10px;"> <div style="border: 1px solid #ccc; padding: 2px 10px; margin: 0 5px;">Reset</div> <div style="border: 1px solid #ccc; padding: 2px 10px; margin: 0 5px;">Show XML</div> </div>		