The scope of any quantifier is the shortest open formula immediately following it.

Ex:

In the wff $(\exists xFx \rightarrow \forall y(Gy\&Dy))$

The scope of $\exists x$ is $Fx$

The scope of $\forall y$ is $(Gy\&Dy)$

In the wff $\forall x(Fx\&\exists yGxy)$

The scope of $\forall x$ is $(Fx\&\exists yGxy)$

Notice that the scope of $\forall x$ contains another quantifier ($\exists y$). In cases like this, we say that $\forall x$ has a *wider* scope, and that $\exists y$ has a *narrower* scope.

When a variable falls under the scope of a quantifier for that variable, we say it is *bound*.

In the wff $\forall x(Fx \& \exists yGxy)$

x is bound by $\forall x$

y is bound by $\exists y$

Consider the following expression:

$$\exists xGxy$$

Here, x is bound by the existential quantifier. y, however is *unbound*. It's worth noting that wffs cannot contain unbound variables.