Philosophy 352

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1 Important Clarification

I may have misled you during the last two classes with respect to the introduction of the Falsum $\perp$. It is of course correct that you only get a Falsum from two **closed** contradictory wffs. Nonetheless, you can introduce $\perp$ after two **open** wffs, where one is the negation of the other. Although two open wffs, one of which is the negation of the other, do not *directly* give you a contradiction, you can always derive a contradiction from them with a few extra steps. For example, consider the two open wffs $A(x)$ and $\neg A(x)$. With conjunction introduction we get $(A(x) \wedge \neg A(x))$. Now we can existentially generalize and get $\exists x(A(x) \wedge \neg A(x))$; and this is a contradiction. For example, if $A(x)$ stands for "x is even", and if the domain of quantification consists of the positive integers, then $\exists x(A(x) \wedge \neg A(x))$ says: "there exists an integer that is even and not even." The Falsum Rules in your handout are therefore correct, because any two open wffs, one of which is the negation of the other, always will result in a contradiction. Therefore, we do not have to add the extra steps; we can take a shortcut and simply put the Falsum after two open wffs, one of which is the negation of the other. Another example: Take the open wffs $A(x, y)$ and $\neg A(x, y)$. Here too, you will be able to derive the contradiction $\exists x \exists y(A(x, y) \wedge \neg A(x, y))$, by using conjunction introduction and then existential generalization on x and y.

I am very sorry if I misled you in any way. If you have any questions about this, please feel free to send me an email.

Also check your second midterm to make sure that I did not incorrectly deduct any marks on this point. If I did please let me know. You might bring your 2nd midterm to the final exam and I will correct any mistakes I might have made.