

Lab 3 Part 3

Task 4

1. ~~⊗ ⊗ ⊗ ⊗~~ $\neg f(\text{Jerry})$

2. ~~⊗ ⊗ ⊗ ⊗ ⊗~~ $\neg C(\text{Rachel}^{\text{el}}, \text{Chelsea})$

3. ~~⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗~~ $\neg C(\text{Jan}, \text{Sharon})$

4. ~~⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗~~ $\neg \exists x C(x, \text{Bob})$

5. $\forall y (y \neq \text{Joseph} \rightarrow C(\text{Sanjay}, y))$

6. $\exists x \neg f(x)$

7. $\exists x \neg f(x)$

8. $\exists x (f(x) \wedge \forall y (f(y) \rightarrow y = x))$

9. $\exists! x f(x)$

10. $\forall x (f(x) \rightarrow \exists y (C(x, y)))$

11. $\exists x (f(x) \wedge \forall y \neg C(x, y))$

12. $\exists x \exists y x \neq y \wedge \neg C(x, y)$

13. $\exists x \forall y C(x, y)$

14. $\exists x \exists y (x \neq y \wedge \exists z (\neg C(x, z) \wedge \neg C(y, z)))$

15. $\exists x \exists y (x \neq y \wedge \forall z (C(x, z) \vee C(y, z)))$