

1. $(x)(Mx \rightarrow (\exists y)(Py \cdot Cy))$
2. $(x)(Mx \rightarrow Tx)$

3. $(\exists x)(Dx \cdot Lx) \rightarrow (\exists x)(Dx \cdot Ex)$
4. $(x)\{ (Dx \cdot Lx) \rightarrow [(y)((Dy \cdot Ly) \rightarrow Ey) \rightarrow Ex] \}$
5. $(x)\{ [(Sx \cdot Px) \rightarrow (Bx \vee Zx)] \rightarrow (\exists y)((By \cdot Py) \vee (Zy \cdot Py)) \}$

:5-_____

$$. [(\exists x)Fx \vee (\exists x)Gx] \equiv (\exists x)(Fx \vee Gx)$$

6. $(x)[(Sx \cdot Px) \rightarrow \{(y)(By \rightarrow \sim Py) \vee Bx\}]$
7. $(x)[(Vx \rightarrow Fx) \cdot (Vx \rightarrow Rx)] \rightarrow \{(\exists y)Vy \rightarrow (\exists z)(Rz \cdot Fz)\}$
8. $(x)\{ [Vx \cdot (y)(Vy \rightarrow Ry)] \rightarrow Rx \}$
9. $[(x)(Wx \rightarrow Ax) \cdot (y)(Hy \rightarrow \sim Sy)] \rightarrow (\exists x)(Wx \cdot Mx)$
10. $(x)[(Hx \cdot \sim Sx) \rightarrow \{(y)(Wy \rightarrow Ay) \rightarrow Mx\}]$

1_____

1. $(\exists x)(Fx \cdot Gx) / \therefore (\exists x)Fx \cdot (\exists x)Gx$
2. $Fa \cdot Ga$ 1, *EI*
3. Fa 2, *simp*
4. Ga 2, *simp*
5. $(\exists x)Fx$ 3, *EG*
6. $(\exists x)Gx$ 4, *EG*
7. $(\exists x)Fx \cdot (\exists x)Gx$ 5, 6, *conj*

4_____

(...)

1. $(\exists x)(p \rightarrow Fx) \quad \therefore p \rightarrow (\exists x)Fx$

→ 2. p
3. $p \rightarrow Fa \quad 1, EI$
4. $Fa \quad 2, 3, M.P.$
5. $(\exists x)Fx \quad 4, EG$

6. $p \rightarrow (\exists x)Fx \quad 2-5, CP$

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1. $(x)Fx \rightarrow p \quad \therefore (\exists x)(Fx \rightarrow p)$

2. $\sim p \rightarrow \sim (x)Fx \quad 1, trans$

3. $\sim p \rightarrow (\exists x)\sim Fx \quad 2, QN$

→ 4. $\sim p$
5. $(\exists x)\sim Fx \quad 2, 3, M.P.$
6. $\sim Fa \quad 5, EI$

7. $\sim p \rightarrow \sim Fa \quad 4-6, CP$

8. $Fa \rightarrow p \quad 7, trans$

9. $(\exists x)(Fx \rightarrow p) \quad 8, EG$