

לוגיקה – תרגיל 13

הוכיחו את הטיעונים הבאים:

.א.

$$\begin{aligned} 1. & (x)(Kx \rightarrow \sim Lx) \\ 2. & (\exists x)(Mx \cdot Lx) \quad / \therefore (\exists x)(Mx \sim Kx) \end{aligned}$$

.ב.

$$\begin{aligned} 1. & (x)[(Rx \cdot Ax) \rightarrow Tx] \\ 2. & Ab \\ 3. & (x)(Rx) \quad / \therefore Tb \end{aligned}$$

.ג.

$$\begin{aligned} 1. & (x)[(Fx \vee Hx) \rightarrow (Gx \cdot Ax)] \\ 2. & \sim(x)(Ax \cdot Gx) \quad / \therefore (\exists x)\sim Hx \end{aligned}$$

$$1. \sim(\exists x)Fx \quad / \therefore Fa \rightarrow Ga .\text{ד.}$$

.ה.

$$\begin{aligned} 1. & (x)[(Ax \cdot Bx) \rightarrow Cx] \\ 2. & Aa \cdot Ba \\ 3. & \sim Cb \quad / \therefore \sim(Ab \cdot Bb) \end{aligned}$$

.ו.

$$\begin{aligned} 1. & (x)(Gx \rightarrow Hx) \\ 2. & (\exists x)(Ix \sim Hx) \\ 3. & (x)(\sim Fx \vee Gx) \quad / \therefore (\exists x)(Ix \sim Fx) \end{aligned}$$

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$$1. (x) [(Bx \cdot Ax) \rightarrow Dx]$$

$$2. (\exists x) (Qx \cdot Ax)$$

$$3. (x) (\sim Bx \rightarrow \sim Qx) \quad / \therefore (\exists x) (Dx \cdot Qx)$$

ח.

$$1. (x) [Px \rightarrow (Ax \vee Bx)]$$

$$2. (x) [(Bx \vee Cx) \rightarrow Qx] \quad / \therefore (x) [(Px \cdot \sim Ax) \rightarrow Qx]$$

תרגיל אתגר

$$1. (x) [Px \rightarrow (Qx \vee Rx)]$$

$$2. (x) [(Sx \cdot Px) \rightarrow \sim Qx] \quad / \therefore (x) (Sx \rightarrow Px) \rightarrow (x) (Sx \rightarrow Rx)$$

בהצלחה!