

# Mantık konuları

## Alıřtırmalar VI

**Alıřtırma** 1. Ařađıdaki formülerin teorem olduđunu özümleyici izelge yöntemi ile gösteriniz.

1.  $\forall x(Fx \rightarrow Gx) \rightarrow (\forall xFx \rightarrow \forall xGx)$

2.  $\forall x(Fx \rightarrow Gx) \rightarrow (\exists xFx \rightarrow \exists xGx)$

3.  $\exists x(Fx \vee Gx) \leftrightarrow (\exists xFx \vee \exists xGx)$

4.  $\forall x(Fx \wedge Gx) \leftrightarrow (\forall xFx \wedge \forall xGx)$

5.  $\exists x(Fx \wedge Gx) \rightarrow (\exists xFx \vee \exists xGx)$

6.  $(\forall xFx \wedge \forall xGx) \rightarrow \forall x(Fx \vee Gx)$

7.  $(\exists xFx \rightarrow \exists xGx) \rightarrow \exists x(Fx \rightarrow Gx)$

8.  $(\forall xFx \rightarrow \forall xGx) \rightarrow \exists x(Fx \rightarrow Gx)$

9.  $\forall x(Fx \leftrightarrow Gx) \leftrightarrow (\forall xFx \leftrightarrow \forall xGx)$

10.  $\forall x(Fx \leftrightarrow Gx) \leftrightarrow (\exists xFx \leftrightarrow \exists xGx)$

11.  $\sim \forall xFx \leftrightarrow \exists x \sim Fx$

12.  $\sim \exists xFx \leftrightarrow \forall x \sim Fx$

13.  $\forall xFx \leftrightarrow \sim \exists x \sim Fx$

14.  $\exists xFx \leftrightarrow \sim \forall x \sim Fx$

15.  $\exists x(\exists xFx \rightarrow Fx)$

16.  $\exists x(Fx \rightarrow \forall xFx)$

17.  $\forall xFx \leftrightarrow \forall yFy$

18.  $\exists xFx \leftrightarrow \exists yFy$