












# 课后作业 (Assignments)

## 一、阅读 (Reading)

1 阅读教材第一章;

2 课外阅读:

	冯·诺依曼的计算机科学哲学思想.pdf.pdf	2019-10-07 18:07	199KB
	Propositional Logic(1)-by Gerard O' Regan.pdf.pdf	2019-10-07 18:06	2.41MB
	数理逻辑——算法数学的形式化语言.pdf	2019-10-07 18:03	599KB
	数理逻辑英基人-弗雷格.pdf	   2019-10-07 18:03	610KB
	数理逻辑发展的基本动机.pdf	2019-10-07 18:03	452KB
	千古绝伦的大智者-莱布尼茨.pdf	2019-10-07 18:04	2.36MB
	数理逻辑英基者-乔治·布尔.pdf	2019-10-07 18:03	876KB
	逻辑、数学与人生, 读王浩《哥德尔》有感.pdf	2019-10-07 18:03	1.23MB

## 二、问题解答 (Problems)

1. 教材 P28 题 2.

2. 教材 P28 题 4 (4) .

3. 教材 P28 题 5 (5, 6) .

4. Let A, B, and C be propositional wffs. Find two different wffs, where the statement "If A then B else C " reflects the meaning of each wff.

$((A \rightarrow B) \wedge (\neg A \rightarrow C) \text{ or } (A \wedge B) \vee (\neg A \wedge C).)$

5. Use Quine's method to show that each wff is a tautology or contingency.

(1)  $(A \rightarrow B) \wedge (B \rightarrow C) \rightarrow (A \rightarrow C).$

If C = True,  $A \rightarrow C$  is true, so the wff is trivially true too.

If  $C = \text{False}$ , then the wff becomes  $(A \rightarrow B) \wedge (B \rightarrow \text{False}) \rightarrow (A \rightarrow \text{False})$ , which is equivalent to  $(A \rightarrow B) \wedge \neg B \rightarrow \neg A$ .

If  $A = \text{False}$ , then the wff is trivially true.

If  $A = \text{True}$ , the wff becomes  $(\text{True} \rightarrow B) \wedge \neg B \rightarrow \text{False} \equiv B \wedge \neg B \rightarrow \text{False} \equiv \text{False} \rightarrow \text{False} \equiv \text{True}$ .

(2)  $(A \rightarrow B) \vee ((C \rightarrow \neg B) \wedge \neg C)$ .

If  $B = \text{True}$ , then the wff is true.

If  $B = \text{False}$  and  $A = C = \text{True}$ , then the wff is false.

### 三、项目实践 (Programming Practice) (Optional)

1. 输入命题公式，给出其真值表，并判断公式类型。