3.1 一句话的组成部分

> quantifier: all / no / some
> subject term: A
> copula : are / are not
> predicate term: B

3.2 AEIO 标准模板

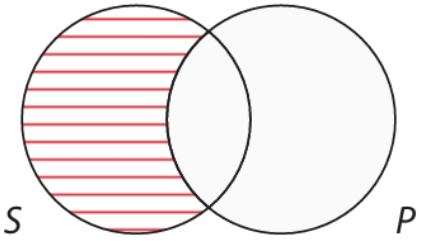
Proposition	Letter name	Quantity	Quality
All *S* are *P*.	**A**	universal	affirmative
No *S* are *P*.	**E**	universal	negative
Some *S* are *P*.	**I**	particular	affirmative
Some *S* are not *P*.	**O**	particular	negative

3.3 AEIO 韦恩图

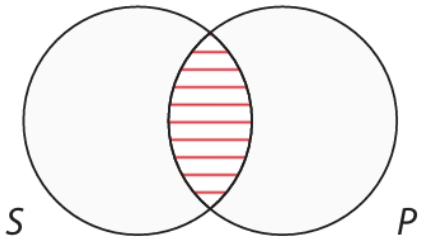
> 跟高中数学的空集交集补集画的韦恩图没什么区别
> 红线部分（阴影部分）表示空，而X表示存在

Shading = emptiness
X = existence

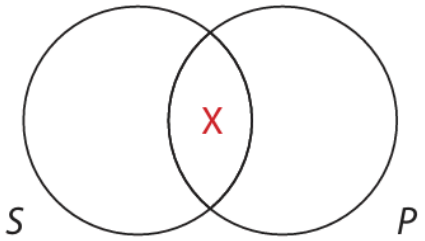
A: All *S* are *P*.



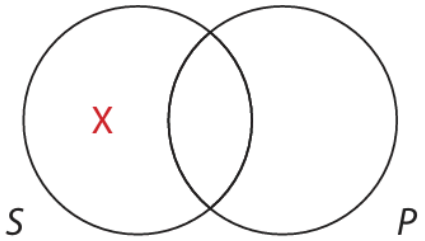
E: No *S* are *P*.



I: Some *S* are *P*.



O: Some *S* are not *P*.



3.4 Conv. Obv. Contra.

> Converse: A B交换 => EIV AOI
> Obverse:双重否定 => V
> Contrapositive: AB取反+交换 =>AOV EII

CONVERSION: SWITCH SUBJECT AND PREDICATE TERMS

Given Statement	Converse	Truth Value
E: No *A* are *B*.	No *B* are *A*.	Same truth value as given statement
I : Some *A* are *B*.	Some *B* are *A*.	
A: All *A* are *B*.	All *B* are *A*.	Undetermined truth value
O: Some *A* are not *B*.	Some *B* are not *A*.	

OBVERSION: CHANGE QUALITY; REPLACE PREDICATE WITH TERM COMPLEMENT

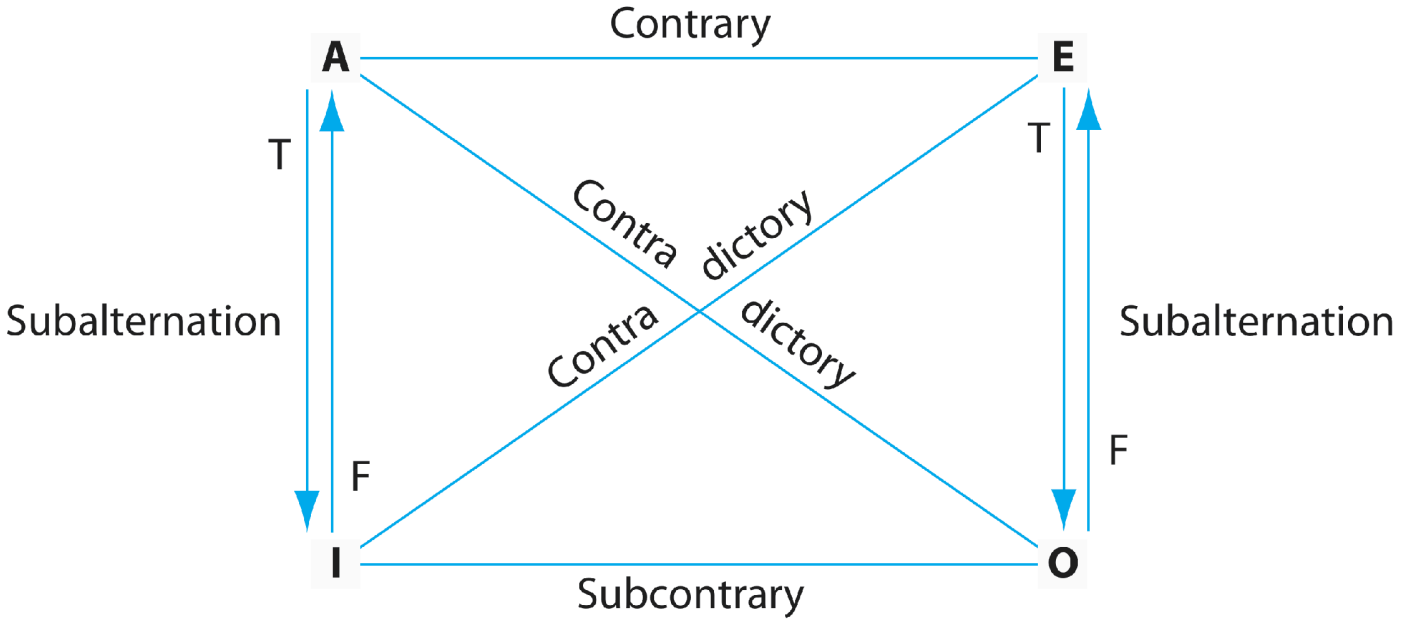
Given Statement	Obverse	Truth Value
A: All *A* are *B*.	No *A* are non-*B*.	Same truth value as given statement
E: No *A* are *B*.	All *A* are non-*B*.	
I : Some *A* are *B*.	Some *A* are not non-*B*.	
O: Some *A* are not *B*.	Some *A* are non-*B*.	

CONTRAPOSITION: SWITCH SUBJECT AND PREDICATE TERMS; REPLACE EACH WITH ITS TERM COMPLEMENT

Given Statement	Contrapositive	Truth Value
A: All *A* are *B*.	All non-*B* are non-*A*.	Same truth value as given statement
O: Some *A* are not *B*.	Some non-*B* are not non-*A*.	
E: No *A* are *B*.	No non-*B* are non-*A*.	Undetermined truth value
I : Some *A* are *B*.	Some non-*B* are non-*A*.	

3.5 不知道考不考

> Contradictory : opposite truth value A 对 O False、E 对 I False
> Contrary : at least one is false (not both true) 至少有一个是错的
> Subcontrary : at least one is true (not both false) 至少有一个是对的
> Subalternation : truth flows downward, falsity flows upward 向下推是Valid，向上推是Undetermined



4.1 三段论标准形式 （AAA-1 Valid）

> Major term: The term that occurs in the predicate of the conclusion. 主语：结论中all/no/some的后面
> Minor term: The term that occurs in the subject of the conclusion. 谓语：结论中are/are not 的后面
> Middle term: The term that occurs twice in the premises. 不存在于结论中的那个语段

四个Figure:

Figure 1

M P
S M
S P

Figure 2

P M
S M
S P

Figure 3

M P
M S
S P

Figure 4

P M
M S
S P

UNCONDITIONALLY VALID FORMS

Figure 1	Figure 2	Figure 3	Figure 4
AAA	EAE	IAI	AEE
EAE	AEE	AII	IAI
AII	EIO	OAO	EIO
EIO	AOO	EIO	

> 上图与下图的区别在于：

- 上图所用的三段论可以无视所谈论的事物是否客观存在
- 下图所用的三段论必须要求某条件是客观存在的

CONDITIONALLY VALID FORMS

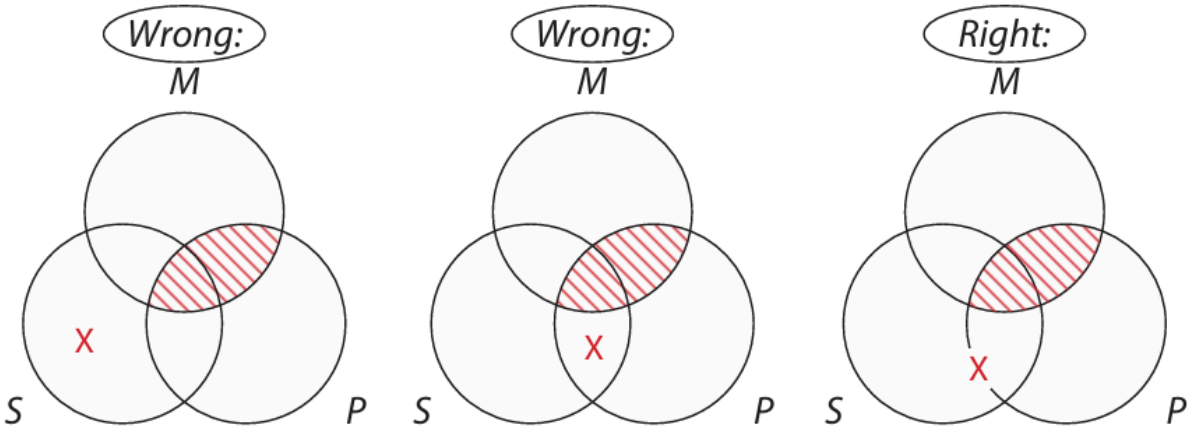
Figure 1	Figure 2	Figure 3	Figure 4	Required condition
AAI EAO	AEO EAO		AEO	*S* exists
		AAI EAO	EAO	*M* exists
			AAI	*P* exists

同样，区分 Boolean和 Aristotelian 是Valid或者Invalid也是通过所谈及事物是否客观存在：Boolean 逻辑更宽松，能讨论不存在的东西，而 Aristotelian 逻辑要求命题里的对象必须是现实中存在的。

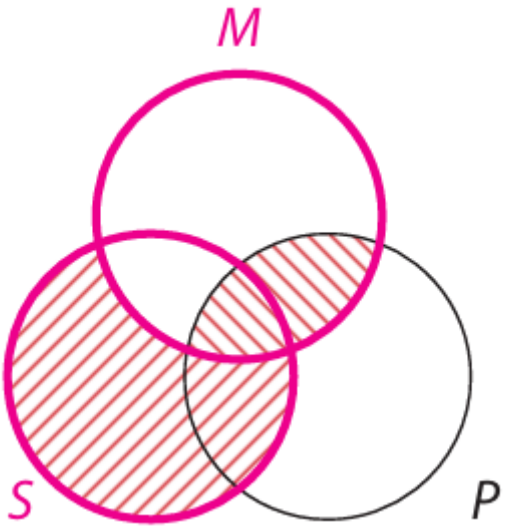
4.2 三段论的韦恩图

跟3.3的韦恩图没什么区别，只不过新增以下内容：

1. 两个相邻的X要合并为一个X：



2. 条件中的不同部分需要用不同方向的阴影绘制



3. 这个图针对本次考试感觉没什么用，不熟悉画图的话容易弄错，考虑只画出来，至于判断Valid和Invalid建议通过4.1内容判断。

5.1 逻辑符号

逻辑符号容易联想到单目运算符，通过单目运算符进行化简

操作符	名字	逻辑功能	出现标志
~	tilde	取反！	not
·	dot	与运算 &	and/also/moreover
v	wedge	或运算 |	or/unless
属于	horseshoe	推断	if then /only if
三等号	triple bar	等于 ==	if and only if

Operator	Name	Logical function	Used to translate
~	tilde	negation	not, it is not the case that
•	dot	conjunction	and, also, moreover
	wedge	disjunction	or, unless
⊃	horseshoe	implication	if . . . then . . . , only if
≡	triple bar	equivalence	if and only if

5.2 化简长串运算符

> 所有运算符认真写大概率不会错，唯一一个需要记忆的：
> 马蹄符号：只有T ）F时是F　别的情况都是T

有任何错误联系Au1Bhi@163.com