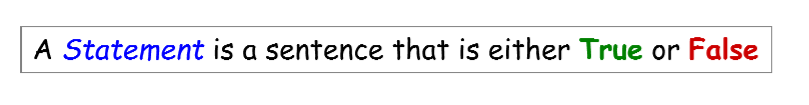
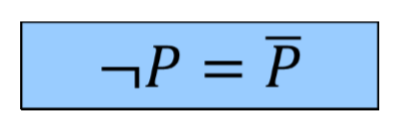
WEEK 1



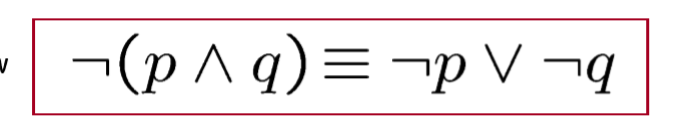




同低异高

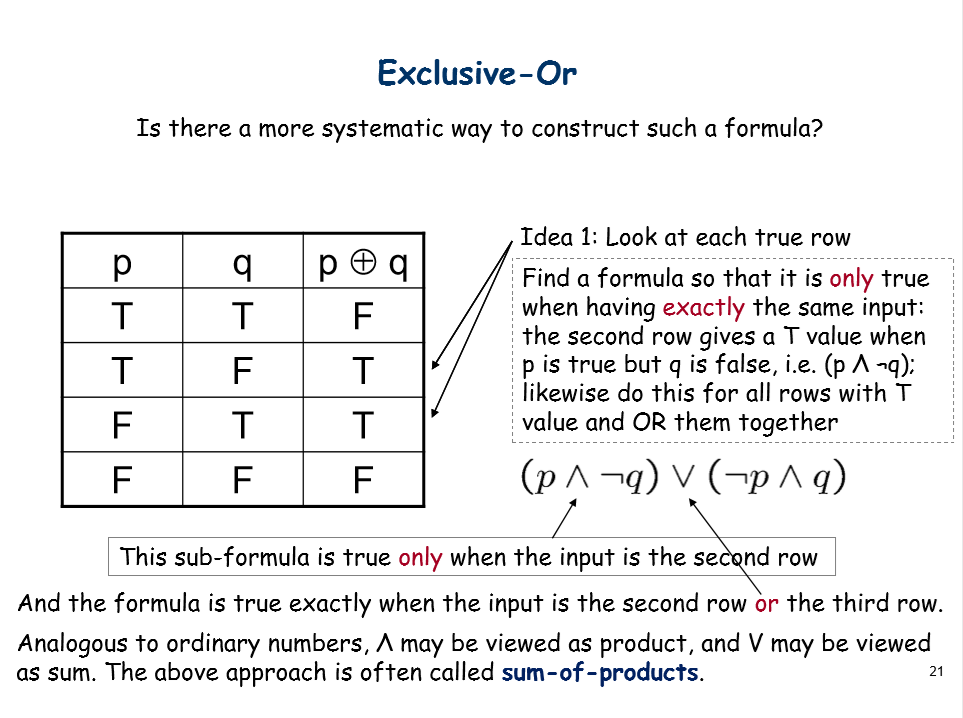
加号减号。只看真/假

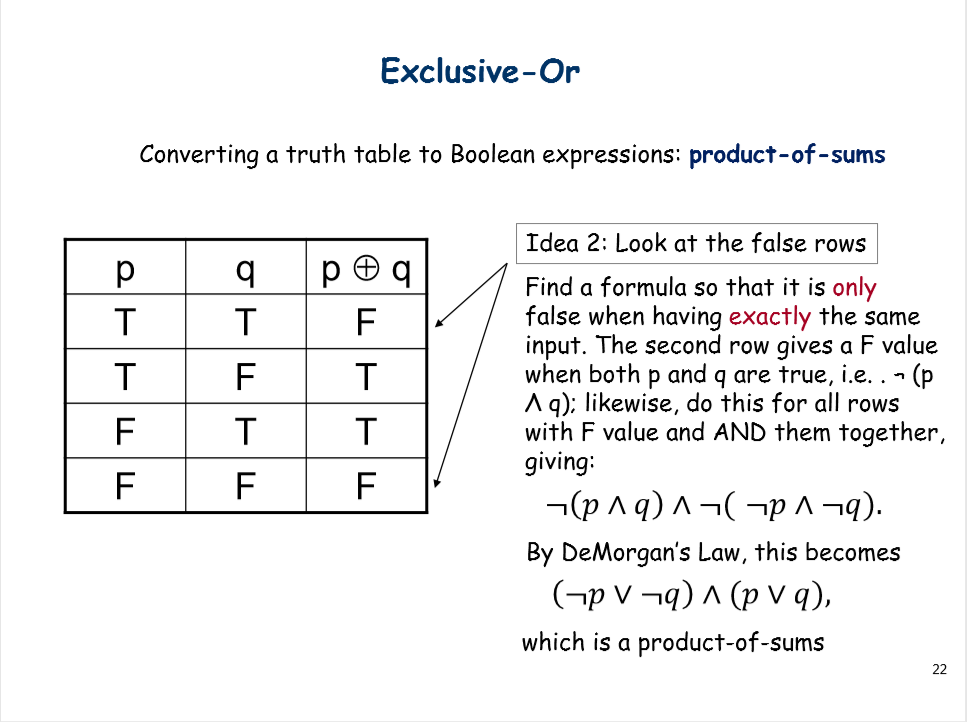




Or： \* and： +

Sum of products: 只看真的时候。pq+pq’



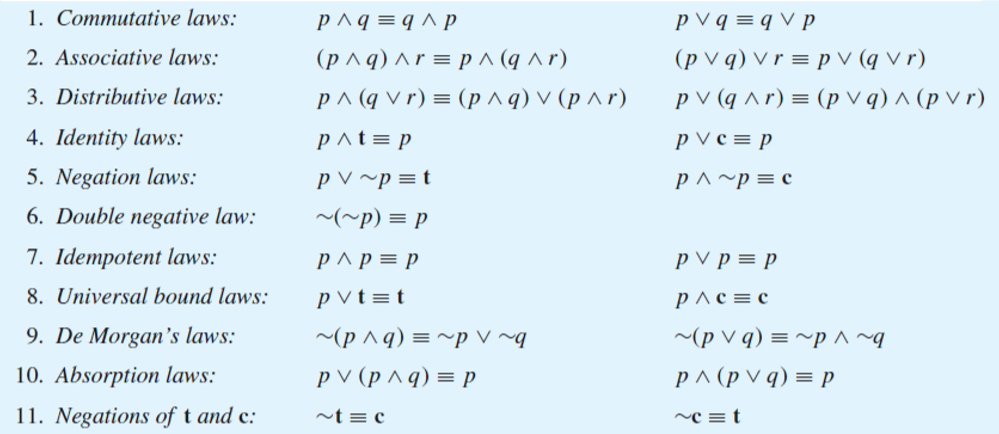


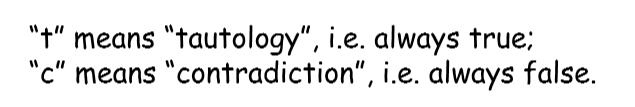
写成加法和乘法

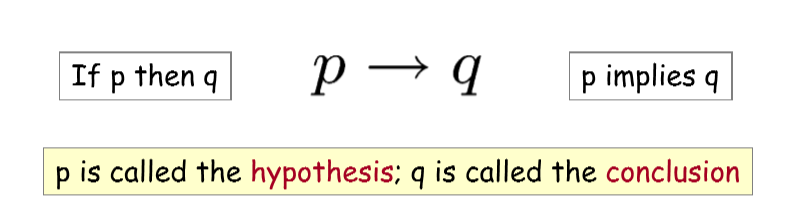
 (A+B)(B+C) 原理？

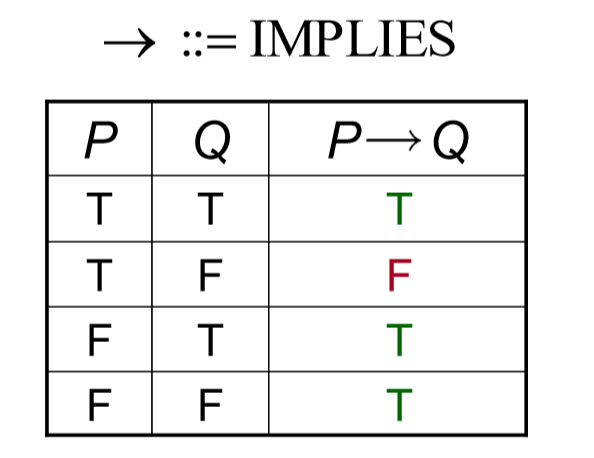
两种方法理解：看成T然后取反，deMorgan，或者F+F

看真行，加法。

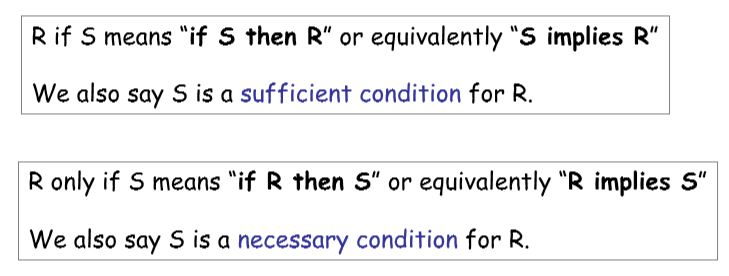


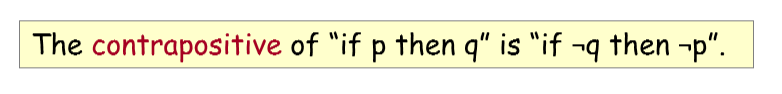






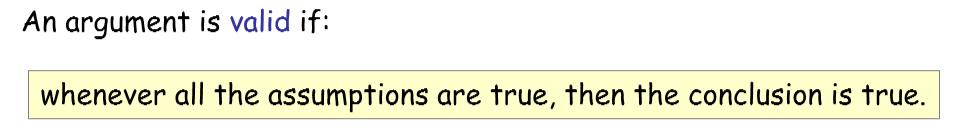
非假即为真





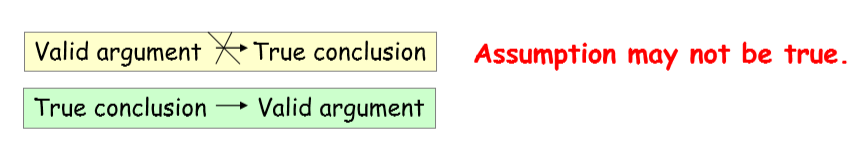
开车不喝酒，喝酒不开车。

思路：逆反命题



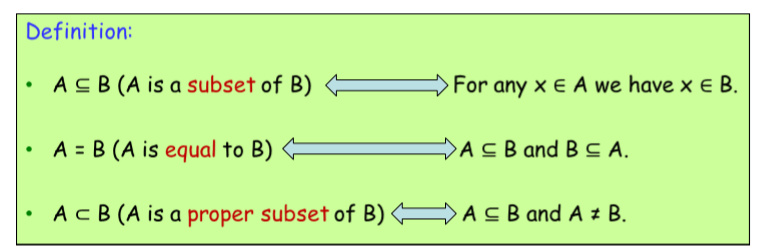


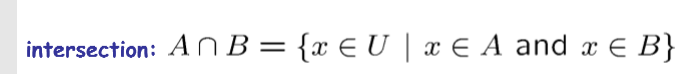
证明valid：列真值表。或者写情况。

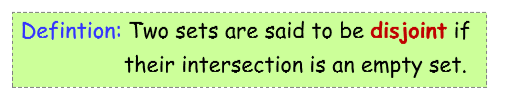


WEEK 2

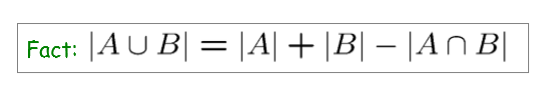


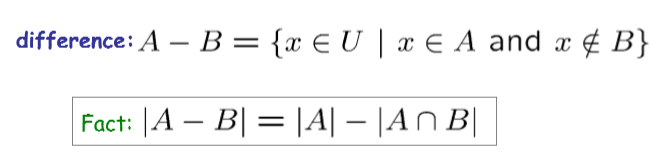


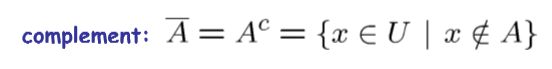


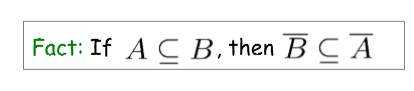


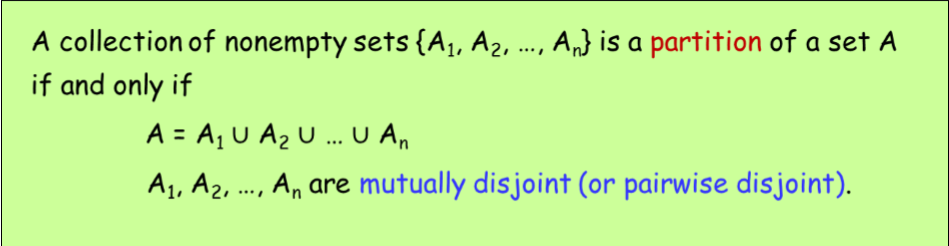
画图



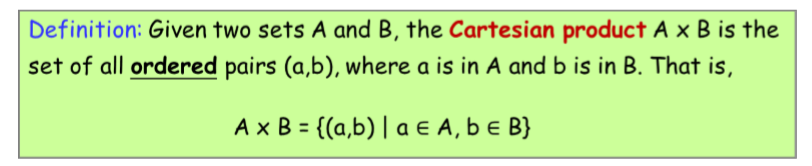


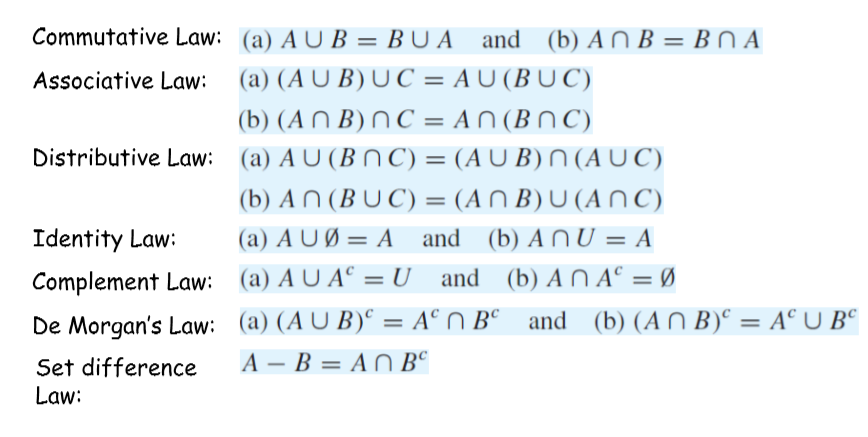




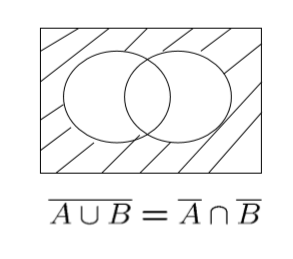


必须严格等于



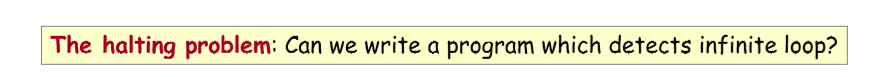


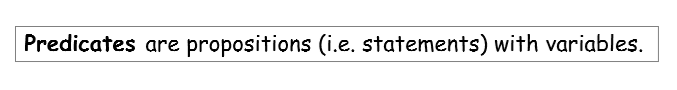




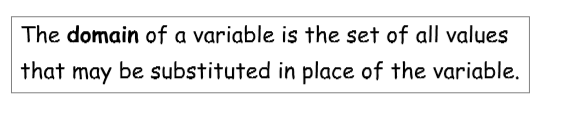
画图，标序号

集合证明：韦恩图，算数计算，定义（相等=互相从属，并就是or，交就是and）

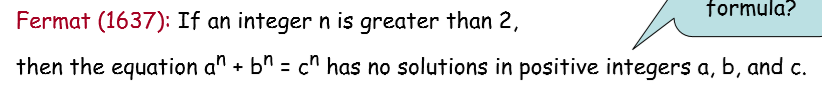


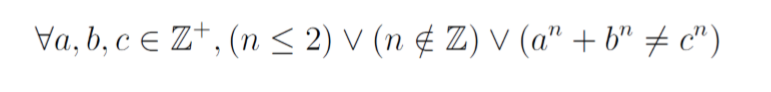


谓词：含有变量的命题

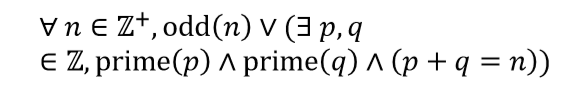


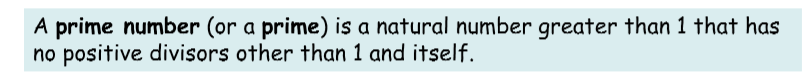
找变量，找定义域，找条件。（看IF）



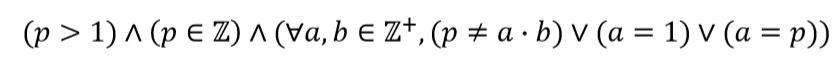








关键：找if



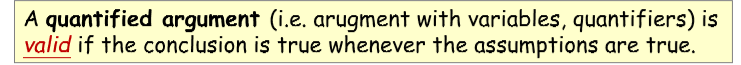
如果p=a\*b 那么 a=1 或者 a=p

否定：任意和存在互换。

限定词的顺序

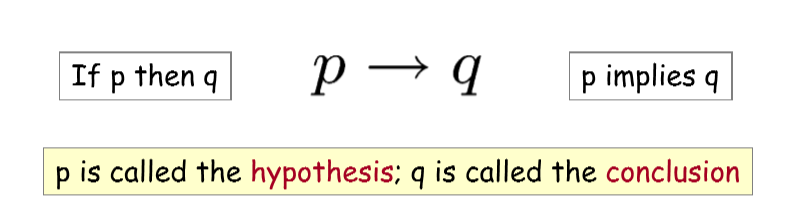






mathematical induction

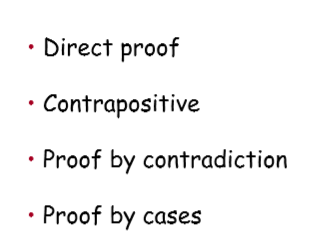
介绍imply





Week 3

数学证明方法



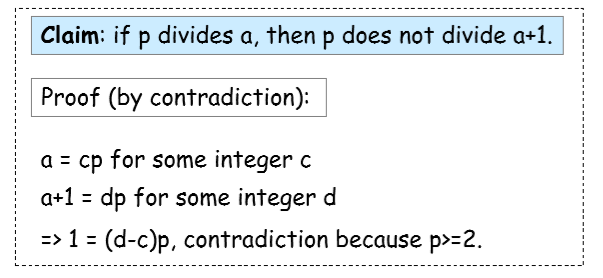
直接证明

逆反命题

**反证法**

Q．E．D证毕

很有用哈。数论，图论……

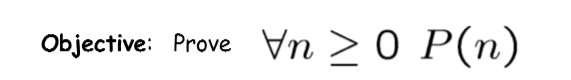


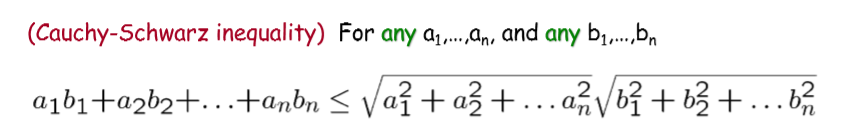
奇数：2k+1

偶数：2k

**数学归纳法**

证明：任意n，类的命题

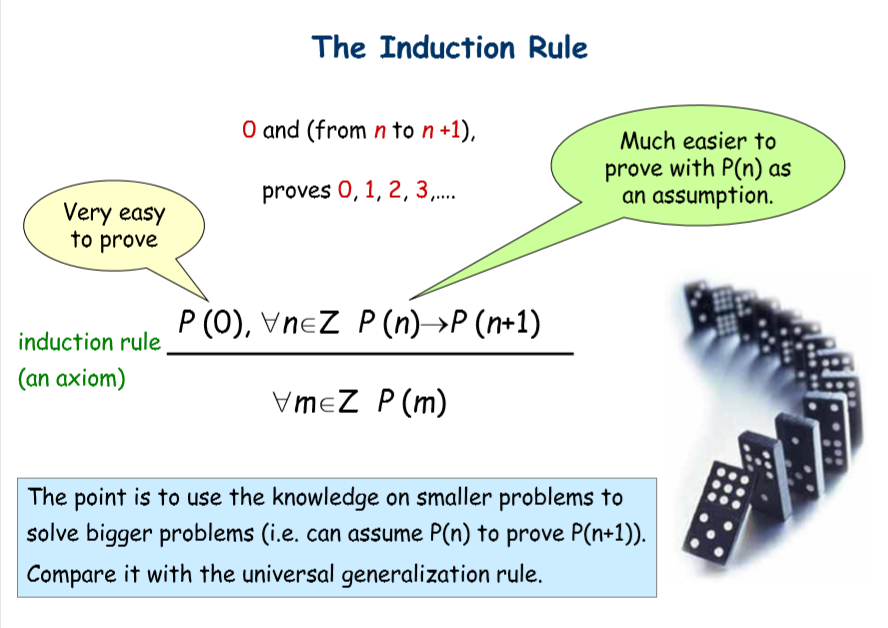




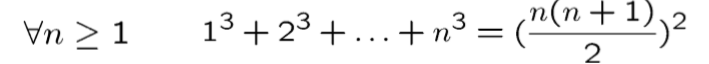
**利用P（2）**

向量点乘<=向量模 a·b <= |a||b|

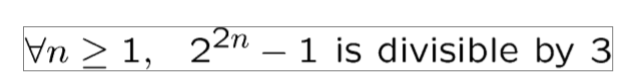
递推

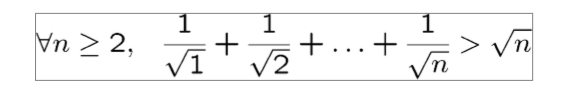


例子：

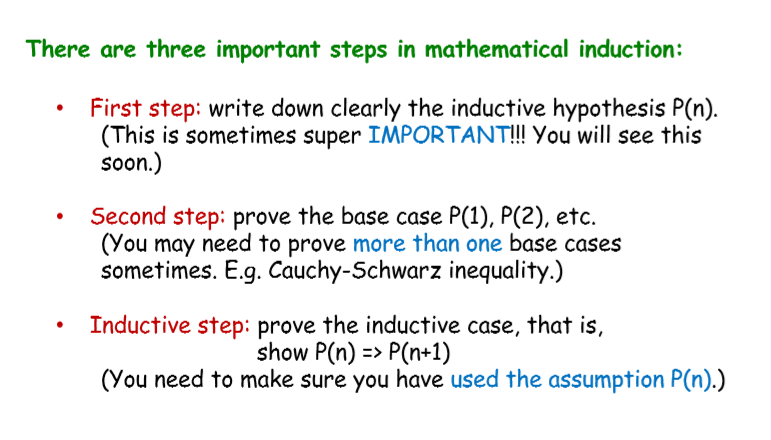
证明等式：



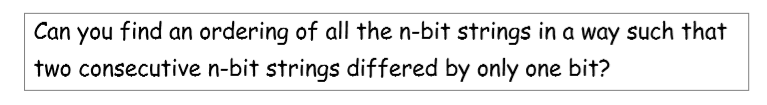
证明性质：

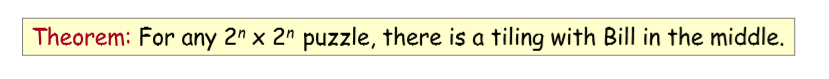
证明不等式：

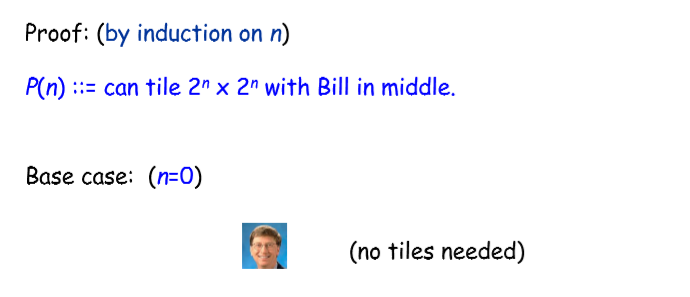
放缩。

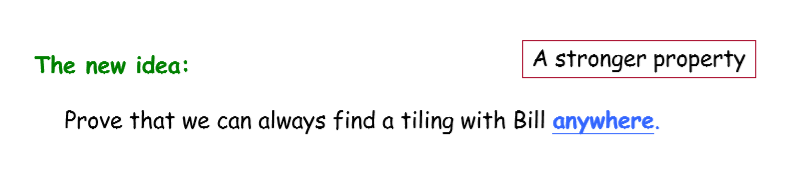


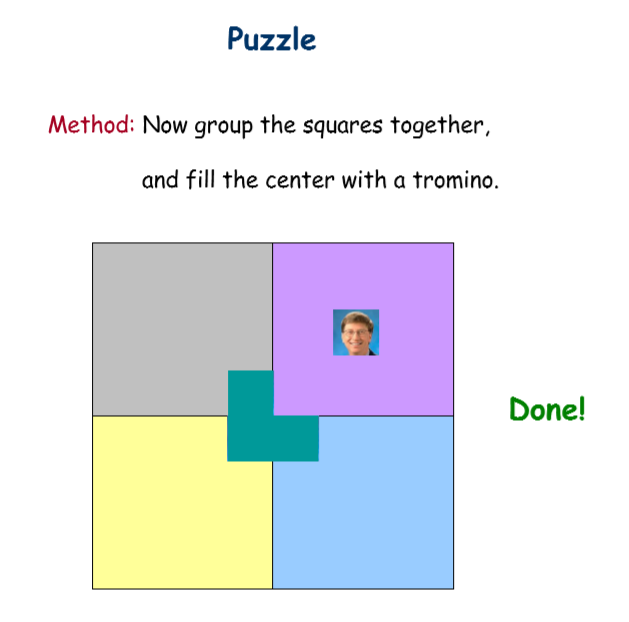
Gray Code格雷码



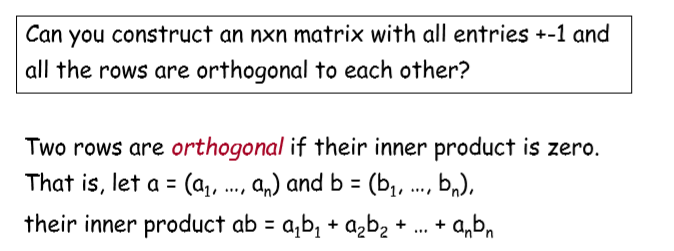




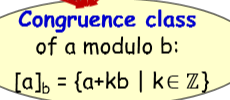


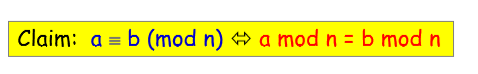


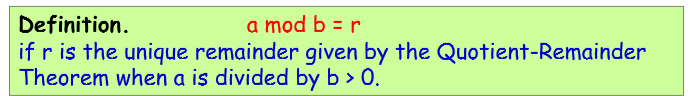
选择强势的statement

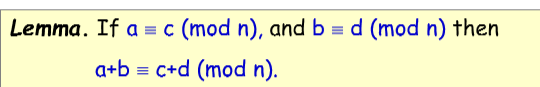


**LEC 7 同余**

右下标是倍数。

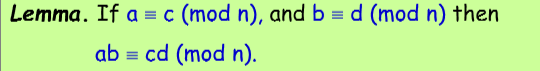


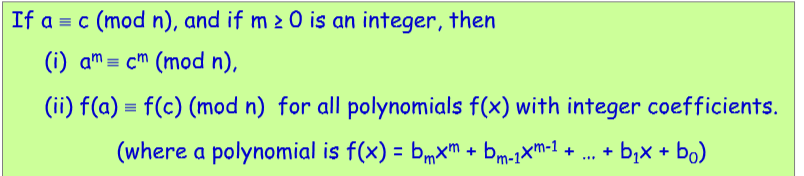




就这样转化。

等价条件:作差

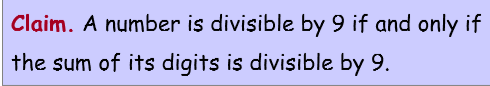


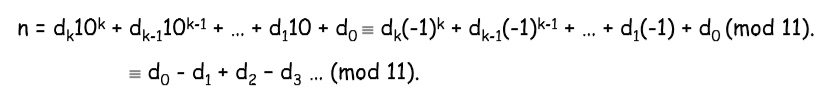


证明i：归纳法，用乘法theorem。

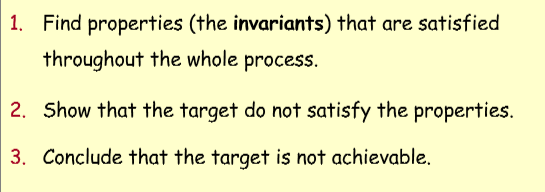
做变换。

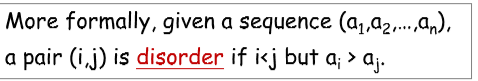
同余是很灵活的。

小学奥数

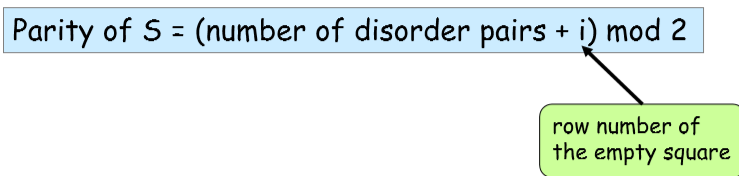


整除11：奇数位数字和 = 偶数位数字和



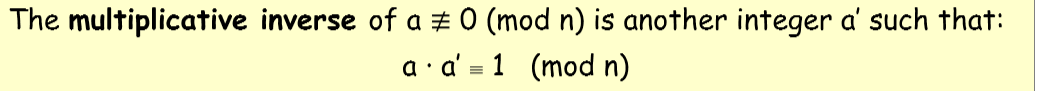




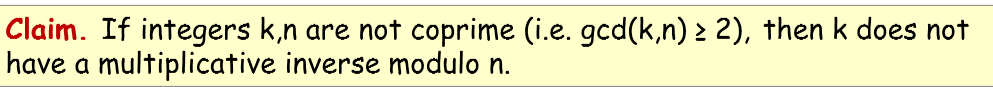


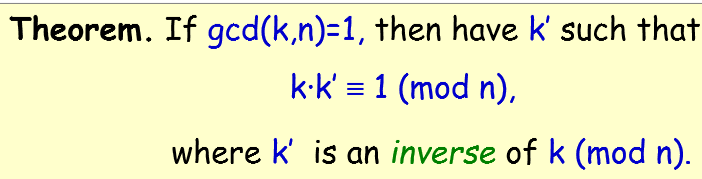
**需要考虑空白块的位置i**

证明每次移动不改变parity



重要概念！！！

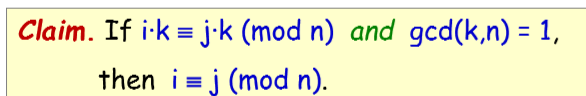


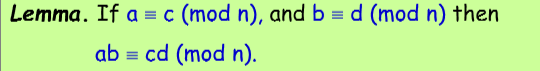


gcd = spc

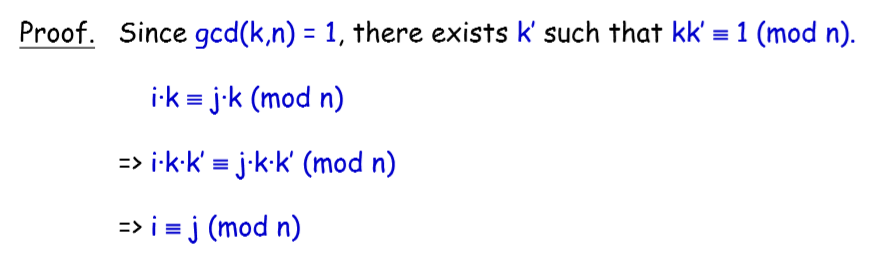


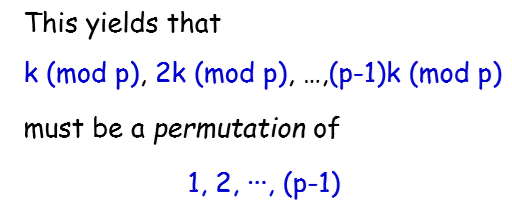
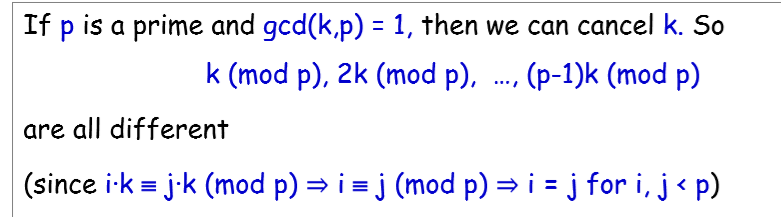
写出来看就知道了。

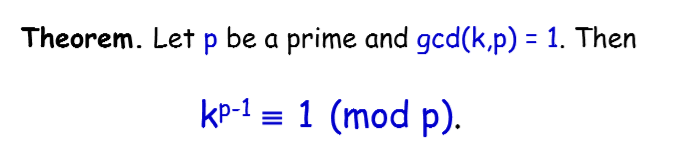


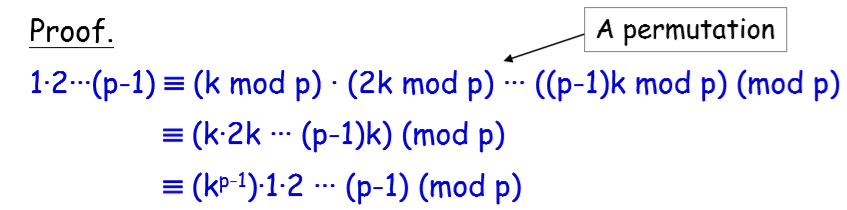


注意正向和反向的区别

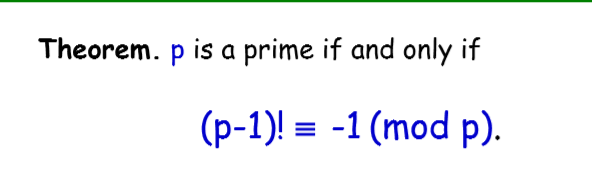


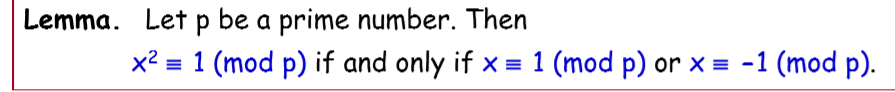




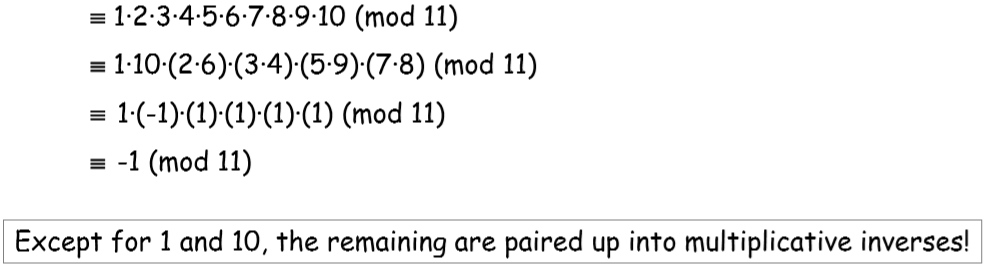


P是质数



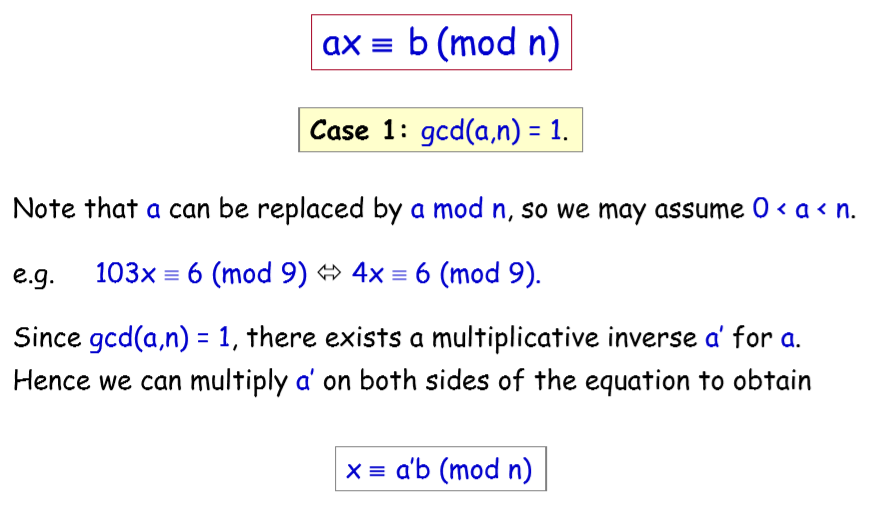






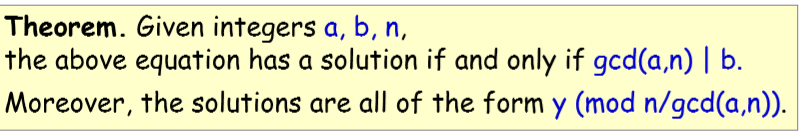
配对。为啥不会配到相同的？

解同余方程

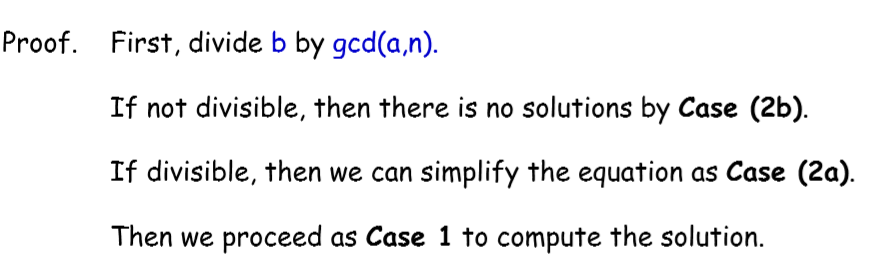


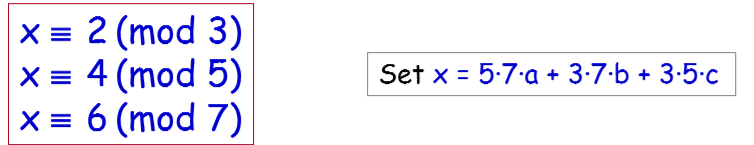
A,n互质的时候必有解。

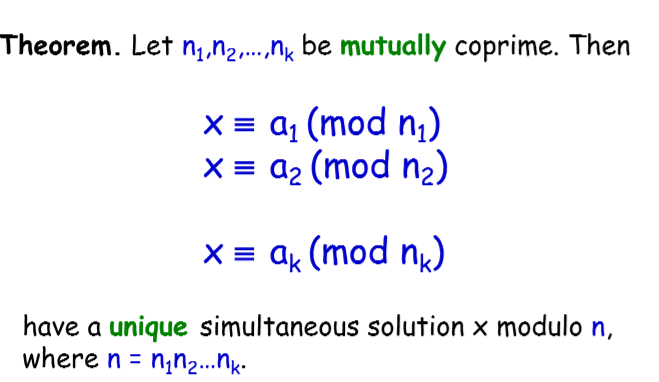
或者直接写开，看看能不能除

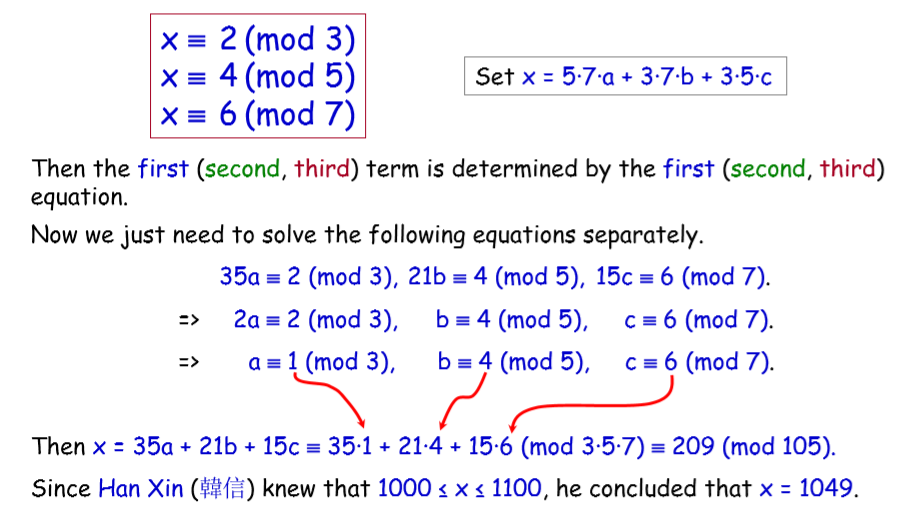


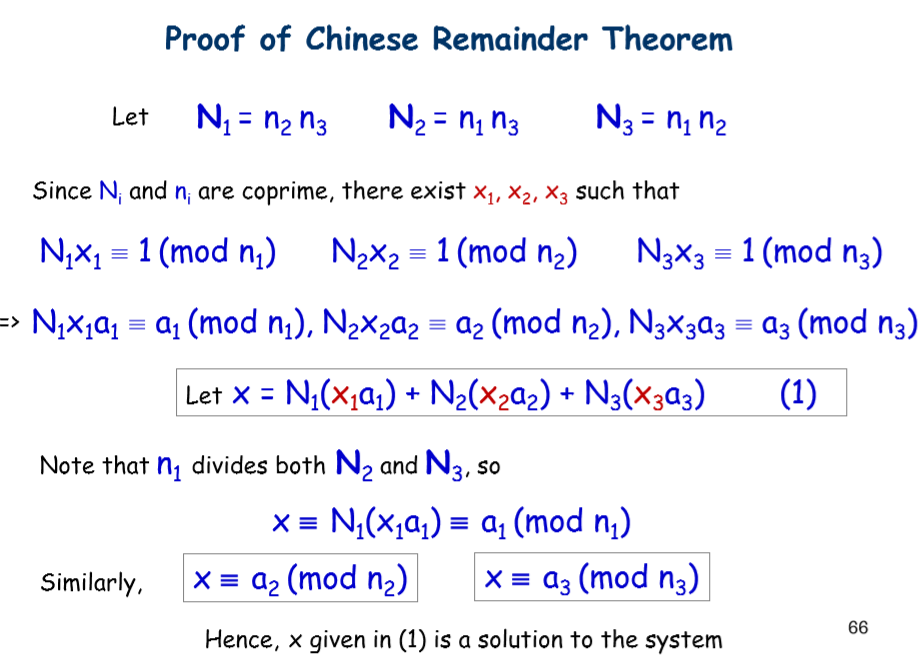
列一下就知道了。

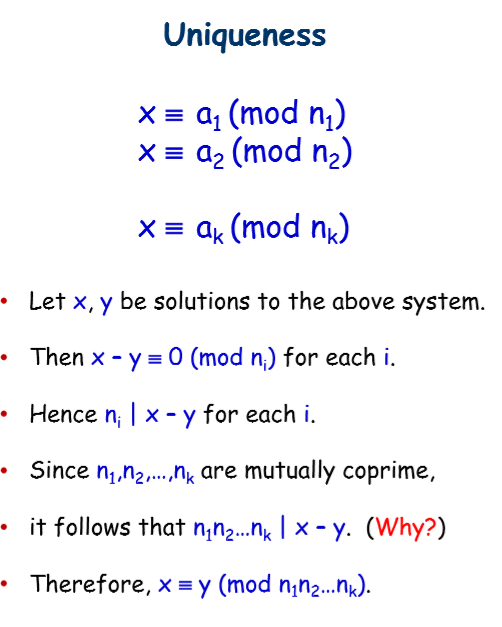












如果不是互质，拆分。

