

## 北京大学计算机考研复试

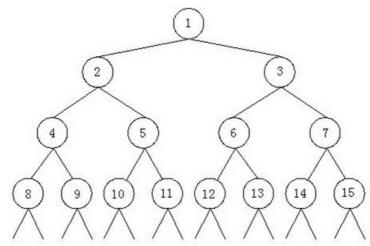
## 一. 编程题

- 1. 在 skew binary 表示中,第 k 位的值 x[k] 表示 x[k]×(2^(k+1)-1)。每个位上的可能数字是 0 或 1,最后面一个非零位可以是 2,例如,10120(skew) = 1×(2^5-1) + 0×(2^4-1) + 1×(2^3-1) + 2×(2^2-1) + 0×(2^1-1) = 31 + 0 + 7 + 6 + 0 = 44。前十个 skew 数是 0、1、2、10、11、12、20、100、101、以及 102。
- 2. 把 M 个同样的苹果放在 N 个同样的盘子里,允许有的盘子空着不放,问共有多少种不同的分法? 注意:  $5 \times 1 \times 1$  和  $1 \times 5 \times 1$  是同一种分法,即顺序无关。
- 3. 1
  /\
  2 3
  /\/\
  4567
  /\/\

如上图所示,由正整数 1, 2, 3, …组成了一棵无限大的二叉树。从某一个结点到根结点(编号是1的结点)都有一条唯一的路径,比如从5到根结点的路径是(5, 2, 1),从4到根结点的路径是(4, 2, 1),从根结点1到根结点的路径上只包含一个结点1,因此路径就是(1)。对于两个结点x和y,假设他们到根结点的路径分别是(x1, x2, … ,1)和(y1, y2, …,1),那么必然存在两个正整数i和j,使得从xi 和yj 开始,有xi = yj,xi + 1 = yj + 1,xi + 2 = yj + 2,…

现在的问题就是,给定x和y,要求他们的公共父节点,即xi(也就是 yj)。

- 4. 输入一个长度不超过20的字符串,对所输入的字符串,按照ASCII码的大小从小到大进行排序,请输出排序后的结果
- 5. 将M进制的数X转换为N进制的数输出。
- 6. N只小白鼠(1 <= N <= 100),每只鼠头上戴着一顶有颜色的帽子。现在称出每只白鼠的重量,要求按照白鼠重量从大到小的顺序输出它们头上帽子的颜色。帽子的颜色用"red","blue"等字符串来表示。不同的小白鼠可以戴相同颜色的帽子。白鼠的重量用整数表示。
- 7. 输入一个字符串,以回车结束(字符串长度<=100)。该字符串由若干个单词组成,单词之间用一个空格隔开,所有单词区分大小写。现需要将其中的某个单词替换成另一个单词,并输出替换之后的字符串。
- 8. 某国为了防御敌国的导弹袭击,开发出一种导弹拦截系统。但是这种导弹拦截系统有一个缺陷:虽然它的第一发炮弹能够到达任意的高度,但是以后每一发炮弹都不能高于前一发的高度。某天,雷达捕捉到敌国的导弹来袭,并观测到导弹依次飞来的高度,请计算这套系统最多能拦截多少导弹。拦截来袭导弹时,必须按来袭导弹袭击的时间顺序,不允许先拦截后面的导弹,再拦截前面的导弹。

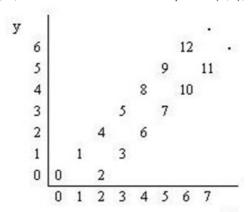


- 9. 如上所示,由正整数1,2,3……组成了一颗特殊二叉树。我们已知这个二叉树的最后一个结点是n。现在的问题是,结点m所在的子树中一共包括多少个结点。 比如,n=12, m=3那么上图中的结点13,14,15以及后面的结点都是不存在的,结点m所在子树中包括的结点有3,6,7,12,因此结点m的所在子树中共有4个结点。
- 10. 有一个神奇的口袋,总的容积是40,用这个口袋可以变出一些物品,这些物品的总体积必须是40。John 现在有n个想要得到的物品,每个物品的体积分别是a1,a2……an。John可以从这些物品中选择一些,如果选出的物体的总体积是40,那么利用这个神奇的口袋,John就可以得到这些物品。现在的问题是,John有多少种不同的选择物品的方式。
- 11. 给定一个正整数a,以及另外的5个正整数,问题是:这5个整数中,小于a的整数的和是多少?
- 12. 根据输入的运算符对输入的整数进行简单的整数运算。 运算符只会是加+、减-、乘\*、除/、求余%、阶乘! 六个运算符之一。 输出运算的结果,如果出现除数为零,则输出"error",如果求余运算的第二个运算数为 0,也输出"error"。
- 13. 输入10个整数,彼此以空格分隔。重新排序以后输出(也按空格分隔),要求: 1.先输出其中的奇数,并按从大到小排列; 2.然后输出其中的偶数,并按从小到大排列。
- 14. 求任意两个不同进制非负整数的转换(2进制~16进制),所给整数在long所能表达的范围之内。 不同进制的表示符号为(0, 1, ..., 9, a, b, ..., f)或者(0, 1, ..., 9, A, B, ..., F)。
- 15. One of the first users of BIT's new supercomputer was Chip Diller. He extended his exploration of powers of 3 to go from 0 to 333 and he explored taking various sums of those numbers. "This supercomputer is great," remarked Chip. "I only wish Timothy were here to see these results." (Chip moved to a new apartment, once one became available on the third floor of the Lemon Sky apartments on Third Street.)
- 16. 给定一个由不同的小写字母组成的字符串,输出这个字符串的所有全排列。 我们假设对于小写字母有'a' < 'b' < ... < 'y' < 'z',而且给定的字符串中的字母已经按照从小到大的顺序排列。
- 17. 对一个字符串中的所有单词,如果单词的首字母不是大写字母,则把单词的首字母变成大写字母。 在字符串中,单词之间通过空白符分隔,空白符包括:空格('')、制表符('\r')、回车符('\r')、换行符('\n')。

吃完巧克力的方案。 例如: 如果N=1,则名名第1天就吃掉它,共有1种方案; 如果N=2,则名名可以第1天吃1块,第2天吃1块,也可以第1天吃2块,共有2种方案; 如果N=3,则名名第1天可以吃1块,剩2块,也可以第1天吃2块剩1块,所以名名共有2+1=3种方案; 如果N=4,则名名可以第1天吃1块,剩3块,也可以第1天吃2块,剩2块,共有3+2=5种方案。 现在给定N,请你写程序求出名名吃巧克力的方案数目。

- 19. 辰辰是个很有潜能、天资聪颖的孩子,他的梦想是称为世界上最伟大的医师。 为此,他想拜附近最有威望的医师为师。医师为了判断他的资质,给他出了一个难题。 医师把他带到个到处都是草药的山洞里对他说:"孩子,这个山洞里有一些不同的草药,采每一株都需要一些时间,每一株也有它自身的价值。 我会给你一段时间,在这段时间里,你可以采到一些草药。如果你是一个聪明的孩子,你应该可以让采到的草药的总价值最大。" 如果你是辰辰,你能完成这个任务吗?
- 20. The digital root of a positive integer is found by summing the digits of the integer. If the resulting value is a single digit then that digit is the digital root. If the resulting value contains two or more digits, those digits are summed and the process is repeated. This is continued as long as necessary to obtain a single digit. For example, consider the positive integer 24. Adding the 2 and the 4 yields a value of 6. Since 6 is a single digit, 6 is the digital root of 24. Now consider the positive integer 39. Adding the 3 and the 9 yields 12. Since 12 is not a single digit, the process must be repeated. Adding the 1 and the 2 yeilds 3, a single digit and also the digital root of 39.
- 21. 已知正整数k满足2<=k<=9,现给出长度最大为30位的十进制非负整数c,求所有能整除c的k.
- **22.** 在一个整数数组上,对于下标为i的整数,如果它大于所有它相邻的整数,或者小于所有它相邻的整数,则称为该整数为一个极值点,极值点的下标就是i。
- 23. Julius Caesar曾经使用过一种很简单的密码。对于明文中的每个字符,将它用它字母表中后5位对应的字符来代替,这样就得到了密文。比如字符A用F来代替。如下是密文和明文中字符的对应关系。密文ABCDEFGHIJKLMNOPQRSTU你的任务是对给定的密文进行解密得到明文。你需要注意的是,密文中出现的字母都是大写字母。密文中也包括非字母的字符,对这些字符不用进行解码。
- 24. 班上有学生若干名,给出每名学生的年龄(整数),求班上所有学生的平均年龄,保留到小数点后两位。
- 25. 在 skew binary表示中,第 k 位的值xk表示xk\*(2k+1-1)。 每个位上的可能数字是0 或 1,最后面一个非零位可以是2,例如,10120(skew) = 1\*(25-1) + 0\*(24-1) + 1\*(23-1) + 2\*(22-1) + 0\*(21-1) = 31 + 0 + 7 + 6 + 0 = 44. 前十个skew数是 0、1、2、10、11、12、20、100、101、以及102。
- 26. 有一个网络日志,记录了网络中计算任务的执行情况,每个计算任务对应一条如下形式的日志记录: "hs\_10000\_p"是计算任务的名称, "2007-01-17 19:22:53,315"是计算任务开始执行的时间"年-月-日 时: 分: 秒,毫秒", "253.035(s)"是计算任务消耗的时间(以秒计) hs\_10000\_p 2007-01-17 19:22:53,315 253.035(s) 请你写一个程序,对日志中记录计算任务进行排序。 时间消耗少的计算任务排在前面,时间消耗多的计算任务排在后面。 如果两个计算任务消耗的时间相同,则将开始执行时间早的计算任务排在前面。
- 27. N位同学站成一排,音乐老师要请其中的(N-K)位同学出列,使得剩下的K位同学不交换位置就能排成合唱队形。 合唱队形是指这样的一种队形: 设K位同学从左到右依次编号为1, 2, ..., K,他们的身高分别为T1, T2, ..., TK,则他们的身高满足T1 < T2 < ... < Ti , Ti > Ti+1 > ... > TK (1 <= i <= K)。 你的任务是,已知所有N位同学的身高,计算最少需要几位同学出列,可以使得剩下的同学排成合唱队形。

- 28. 一个正整数,如果它能被7整除,或者它的十进制表示法中某个位数上的数字为7,则称其为与7相关的数.现求所有小于等于n(n<100)的与7无关的正整数的平方和。
- 29. 北京大学对本科生的成绩施行平均学分绩点制(GPA)。既将学生的实际考分根据不同的学科的不同学分按一定的公式进行计算。 公式如下: 实际成绩 绩点 90--100 4.0 85--89 3.7 82--84 3.3 78--81 3.0 75--77 2.7 72--74 2.3 68--71 2.0 64--67 1.5 60--63 1.0 60以下 0 1. 一门课程的学分绩点 =该课绩点\*该课学分 2. 总评绩点=所有学科绩点之和/所有课程学分之和 现要求你编写程序求出某人A的总评 绩点(GPA)。
- 30. 在情报传递过程中,为了防止情报被截获,往往需要对情报用一定的方式加密,简单的加密算法虽然不足以完全避免情报被破译,但仍然能防止情报被轻易的识别。我们给出一种最简的的加密方法,对给定的一个字符串,把其中从a-y,A-Y的字母用其后继字母替代,把z和Z用a和A替代,则可得到一个简单的加密字符串。
- 31. 先输入你要输入的字符串的个数。然后换行输入该组字符串。每个字符串以回车结束,每个字符串少于一百个字符。 如果在输入过程中输入的一个字符串为"stop",也结束输入。 然后将这输入的该组字符串按每个字符串的长度,由小到大排序,按排序结果输出字符串。
- 32. Starting from point (0,0) on a plane, we have written all non-negative integers 0,1,2, ... as shown in the figure. For example, 1, 2, and 3 has been written at points (1,1), (2,0), and (3, 1) respectively and this



pattern has continued.

You are to write a program that reads the

coordinates of a point (x, y), and writes the number (if any) that has been written at that point. (x, y) coordinates in the input are in the range 0...5000.

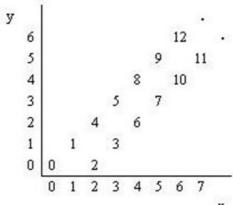
- 33. 求2个浮点数相加的和 题目中输入输出中出现浮点数都有如下的形式: P1P2...Pi.Q1Q2...Qj 对于整数部分, P1P2...Pi是一个非负整数 对于小数部分, Qj不等于0
- 34. 将一个长度最多为30位数字的十进制非负整数转换为二进制数输出。
- 35. 已知矩阵的大小定义为矩阵中所有元素的和。给定一个矩阵,你的任务是找到最大的非空(大小至少是1\*1)子矩阵。 比如,如下4\*4的矩阵 0-2-7092-62-41-41-180-2的最大子矩阵是92-41-18这个子矩阵的大小是15。
- 36. 会下国际象棋的人都很清楚:皇后可以在横、竖、斜线上不限步数地吃掉其他棋子。如何将8个皇后放在棋盘上(有8\*8个方格),使它们谁也不能被吃掉!这就是著名的八皇后问题。对于某个满足要求的8皇后的摆放方法,定义一个皇后串a与之对应,即a=b1b2...b8,其中bi为相应摆法中第i行皇后所处的列数。已经知道8皇后问题一共有92组解(即92个不同的皇后串)。给出一个数b,要求输出第b个串。串的比较是这样的:皇后串x置于皇后串y之前,当且仅当将x视为整数时比y小。

- 37. Some people believe that there are three cycles in a person's life that start the day he or she is born. These three cycles are the physical, emotional, and intellectual cycles, and they have periods of lengths 23, 28, and 33 days, respectively. There is one peak in each period of a cycle. At the peak of a cycle, a person performs at his or her best in the corresponding field (physical, emotional or mental). For example, if it is the mental curve, thought processes will be sharper and concentration will be easier. Since the three cycles have different periods, the peaks of the three cycles generally occur at different times. We would like to determine when a triple peak occurs (the peaks of all three cycles occur in the same day) for any person. For each cycle, you will be given the number of days from the beginning of the current year at which one of its peaks (not necessarily the first) occurs. You will also be given a date expressed as the number of days from the beginning of the current year. You task is to determine the number of days from the given date to the next triple peak. The given date is not counted. For example, if the given date is 10 and the next triple peak occurs on day 12, the answer is 2, not 3. If a triple peak occurs on the given date, you should give the number of days to the next occurrence of a triple peak.
- 38. Children are taught to add multi-digit numbers from right-to-left one digit at a time. Many find the "carry" operation in which a 1 is carried from one digit position to be added to the next to be a significant challenge. Your job is to count the number of carry operations for each of a set of addition problems so that educators may assess their difficulty.
- 39. In an episode of the Dick Van Dyke show, little Richie connects the freckles on his Dad's back to form a picture of the Liberty Bell. Alas, one of the freckles turns out to be a scar, so his Ripley's engagement falls through. Consider Dick's back to be a plane with freckles at various (x,y) locations. Your job is to tell Richie how to connect the dots so as to minimize the amount of ink used. Richie connects the dots by drawing straight lines between pairs, possibly lifting the pen between lines. When Richie is done there must be a sequence of connected lines from any freckle to any other freckle.
- 40. A number of students sit in a circle facing their teacher in the center. Each student initially has an even number of pieces of candy. When the teacher blows a whistle, each student simultaneously gives half of his or her candy to the neighbor on the right. Any student, who ends up with an odd number of pieces of candy, is given another piece by the teacher. The game ends when all students have the same number of pieces of candy. Write a program which determines the number of times the teacher blows the whistle and the final number of pieces of candy for each student from the amount of candy each child starts with.
- 41. Larry graduated this year and finally has a job. He's making a lot of money, but somehow never seems to have enough. Larry has decided that he needs to grab hold of his financial portfolio and solve his financing problems. The first step is to figure out what's been going on with his money. Larry has his bank account statements and wants to see how much money he has. Help Larry by writing a program to take his closing balance from each of the past twelve months and calculate his average account balance.
- 42. 给出一个01字符串(长度不超过100), 求其每一个子串出现的次数。
- 43. Sally Jones has a dozen Voyageur silver dollars. However, only eleven of the coins are true silver dollars; one coin is counterfeit even though its color and size make it indistinguishable from the real silver dollars. The counterfeit coin has a different weight from the other coins but Sally does not know if it is heavier or lighter than the real coins. Happily, Sally has a friend who loans her a very accurate balance scale. The friend will permit Sally three weighings to find the counterfeit coin. For instance, if Sally weighs two coins against each other and the scales balance then she knows these two coins are true. Now if Sally

weighs one of the true coins against a third coin and the scales do not balance then Sally knows the third coin is counterfeit and she can tell whether it is light or heavy depending on whether the balance on which it is placed goes up or down, respectively. By choosing her weighings carefully, Sally is able to ensure that she will find the counterfeit coin with exactly three weighings.

44. 给出两个不大于65535的非负整数,判断其中一个的16位二进制表示形式,是否能由另一个的16位二进制表示形式经过循环左移若干位而得到。 循环左移和普通左移的区别在于:最左边的那一位经过循环左移一位后就会被移到最右边去。比如: 1011 0000 0000 0001 经过循环左移一位后,变成 0110 0000 0000 0011, 若是循环左移2位,则变成 1100 0000 0000 0110

45. 北大网络实验室经常有活动需要叫外买,但是每次叫外买的报销经费的总额最大为C元,有N种菜可以点,经过长时间的点菜,网络实验室对于每种菜i都有一个量化的评价分数(表示这个菜可口程度),为Vi,每种菜的价格为Pi,问如何选择各种菜,使得在报销额度范围内能使点到的菜的总评价分数最大。 注意:由于需要营养多样化,每种菜只能点一次。



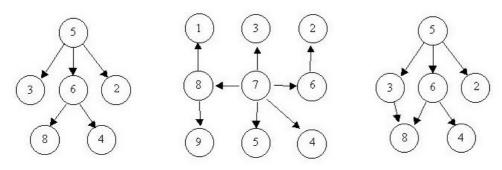
The Head Elder of the tropical island of Lagrishan has a problem. A burst of foreign aid money was spent on extra roads between villages some years ago. But the jungle overtakes roads relentlessly, so the large road network is too expensive to maintain. The Council of Elders must choose to stop maintaining some roads. The map above on the left shows all the roads in use now and the cost in aacms per month to maintain them. Of course there needs to be some way to get between all the villages on maintained roads, even if the route is not as short as before. The Chief Elder would like to tell the Council of Elders what would be the smallest amount they could spend in aacms per month to maintain roads that would connect all the villages. The villages are labeled A through I in the maps above. The map on the right shows the roads that could be maintained most cheaply, for 216 aacms per month. Your task is to write a program that will solve such problems.

47. 一个笼子里面关了鸡和兔子(鸡有2只脚,兔子有4只脚,没有例外)。已经知道了笼子里面脚的总数a,问笼子里面至少有多少只动物,至多有多少只动物。

48. "臭味相投"——这是我们描述朋友时喜欢用的词汇。两个人是朋友通常意味着他们存在着许多共同的兴趣。然而作为一个宅男,你发现自己与他人相互了解的机会并不太多。幸运的是,你意外得到了一份北大图书馆的图书借阅记录,于是你挑灯熬夜地编程,想从中发现潜在的朋友。 首先你对借阅记录进行了一番整理,把N个读者依次编号为1,2,...,N,把M本书依次编号为1,2,...,M。同时,按照"臭味相投"的原则,和你喜欢读同一本书的人,就是你的潜在朋友。你现在的任务是从这份借阅记录中计算出每个人有几个潜在朋友。

**49**. 中位数定义: 一组数据按从小到大的顺序依次排列,处在中间位置的一个数(或最中间两个数据的平均数). 给出一组无序整数,求出中位数,如果求最中间两个数的平均数,向下取整即可(不需要使用浮点数)

- 50. 某程序员开始工作,年薪N万,他希望在中关村公馆买一套60平米的房子,现在价格是200万,假设房子价格以每年百分之K增长,并且该程序员未来年薪不变,且不吃不喝,不用交税,每年所得N万全都积攒起来,问第几年能够买下这套房子(第一年房价200万,收入N万)
- 51. 一根长度为1米的木棒上有若干只蚂蚁在爬动。它们的速度为每秒一厘米或静止不动,方向只有两种,向左或者向右。如果两只蚂蚁碰头,则它们立即交换速度并继续爬动。三只蚂蚁碰头,则两边的蚂蚁交换速度,中间的蚂蚁仍然静止。如果它们爬到了木棒的边缘(0或100厘米处)则会从木棒上坠落下去。在某一时刻蚂蚁的位置各不相同且均在整数厘米处(即1,2,3,…99厘米),有且只有一只蚂蚁A速度为0,其他蚂蚁均在向左或向右爬动。给出该时刻木棒上的所有蚂蚁位置和初始速度,找出蚂蚁A从此时刻到坠落所需要的时间。
- 52. 把M个同样的苹果放在N个同样的盘子里,允许有的盘子空着不放,问共有多少种不同的分法? (用K表示) 5, 1, 1和1, 5, 1 是同一种分法。
- 54. The country is facing a terrible civil war----cities in the country are divided into two parts supporting different leaders. As a merchant, Mr. M does not pay attention to politics but he actually knows the severe situation, and your task is to help him reach home as soon as possible. "For the sake of safety,", said Mr.M, "your route should contain at most 1 road which connects two cities of different camp." Would you please tell Mr. M at least how long will it take to reach his sweet home?
- 55. 给出n个正整数,任取两个数分别作为分子和分母组成最简真分数,编程求共有几个这样的组合。
- 56. 一个数的序列bi, 当b1 < b2 < ... < bS的时候,我们称这个序列是上升的。对于给定的一个序列(a1, a2, ..., aN),我们可以得到一些上升的子序列(ai1, ai2, ..., aiK),这里1 <= i1 < i2 < ... < iK <= N。比如,对于序列(1, 7, 3, 5, 9, 4, 8),有它的一些上升子序列,如(1, 7), (3, 4, 8)等等。这些子序列中序列和最大为18,为子序列(1, 3, 5, 9)的和. 你的任务,就是对于给定的序列,求出最大上升子序列和。注意,最长的上升子序列的和不一定是最大的,比如序列(100, 1, 2, 3)的最大上升子序列和为100,而最长上升子序列为(1, 2, 3)。
- 57. A tree is a well-known data structure that is either empty (null, void, nothing) or is a set of one or more nodes connected by directed edges between nodes satisfying the following properties. There is exactly one node, called the root, to which no directed edges point. Every node except the root has exactly one edge pointing to it. There is a unique sequence of directed edges from the root to each node. For example, consider the illustrations below, in which nodes are represented by circles and edges are represented by lines with arrowheads. The first two of these are trees, but the last is not.

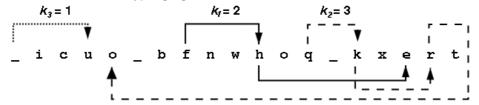


In this problem you will

be given several descriptions of collections of nodes connected by directed edges. For each of these you are to determine if the collection satisfies the definition of a tree or not.

58. Mileage program of ACM (Airline of Charming Merlion) is really nice for the travelers flying frequently. Once you complete a flight with ACM, you can earn ACMPerk miles in your ACM Mileage Bank depended on mileage you actual fly. In addition, you can use the ACMPerk mileage in your Mileage Bank to exchange free flight ticket of ACM in future. The following table helps you calculate how many ACMPerk miles you can earn when you fly on ACM. When you fly ACM Class Code You'll earn First Class F Actual mileage + 100% mileage Bonus Business Class B Actual mileage + 50% mileage Bonus Economy Class Y 1-500 miles 500 miles 500+ miles Actual mileage It's shown that your ACMPerk mileage consists of two parts. One is your actual flight mileage (the minimum ACMPerk mileage for Economy Class for one flight is 500 miles), the other is the mileage bonus (its accuracy is up to 1 mile) when you fly in Business Class and First Class. For example, you can earn 1329 ACMPerk miles, 1994 ACMPerk miles and 2658 ACMPerk miles for Y, B or F class respectively for the fly from Beijing to Tokyo (the actual mileage between Beijing and Tokyo is 1329 miles). When you fly from Shanghai to Wuhan, you can earn ACMPerk 500 miles for economy class and ACMPerk 650 miles for business class (the actual mileage between Shanghai and Wuhan is 433 miles). Your task is to help ACM build a program for automatic calculation of ACMPerk mileage.

59. Weird Wally's Wireless Widgets, Inc. manufactures an eclectic assortment of small, wireless, network capable devices, ranging from dog collars, to pencils, to fishing bobbers. All these devices have very small memories. Encryption algorithms like Rijndael, the candidate for the Advanced Encryption Standard (AES) are demonstrably secure but they don't fit in such a tiny memory. In order to provide some security for transmissions to and from the devices, WWWW uses the following algorithm, which you are to implement. Encrypting a message requires three integer keys, k1, k2, and k3. The letters [a-i] form one group, [j-r] a second group, and everything else ([s-z] and underscore) the third group. Within each group the letters are rotated left by ki positions in the message. Each group is rotated independently of the other two. Decrypting the message means doing a right rotation by ki positions within each group. Consider the message the\_quick\_brown\_fox encrypted with ki values of 2, 3 and 1. The encrypted string is \_icuo\_bfnwhoq\_kxert. The figure below shows the decrypting right rotations for one character in each of the three character



groups.

Looking at all

the letters in the group [a-i] we see {i,c,b,f,h,e} appear at positions {2,3,7,8,11,17} within the encrypted message. After a right rotation of k1=2, these positions contain the letters {h,e,i,c,b,f}. The table below shows the intermediate strings that come from doing all the rotations in the first group, then all rotations in the second group, then all the rotations in the third group. Rotating letters in one group will not change any letters in any of the other groups.



[a-i],  $k_1 = 2$  [j-r],  $k_2 = 3$  [s-z] and  $k_3 = 1$ 

All input strings

contain only lowercase letters and underscores(\_). Each string will be at most 80 characters long. The ki are all positive integers in the range 1-100.

60. The "Gold Bar"bank received information from reliable sources that in their last group of N coins exactly one coin is false and differs in weight from other coins (while all other coins are equal in weight). After the economic crisis they have only a simple balance available (like one in the picture). Using this balance, one is able to determine if the weight of objects in the left pan is less than, greater than, or equal to the weight of objects in the right pan. In order to detect the false coin the bank employees numbered all coins by the integers from 1 to N, thus assigning each coin a unique integer identifier. After that they began to weight various groups of coins by placing equal numbers of coins in the left pan and in the right pan. The identifiers of coins and the results of the weightings were carefully recorded. You are to write a program that will help the bank employees to determine the identifier of the false coin using the results of these weightings.

61. 编写一个程序,将输入字符串中的字符按如下规则排序。 规则1: 英文字母从A到Z排列,不区分大小写。如,输入: Type 输出: epTy 规则2: 同一个英文字母的大小写同时存在时,按照输入顺序排列。 如,输入: BabA 输出: aABb 规则3: 非英文字母的其它字符保持原来的位置。 如,输入: By?e 输出: Be?y 样例: 输入: A Famous Saying: Much Ado About Nothing(2012/8). 输出: A aaAAbc dFgghh: iimM nNn oooos Sttuuuy (2012/8).

62. 题目描述 把M个同样的苹果放在N个同样的盘子里,允许有的盘子空着不放,问共有多少种不同的分法? (用K表示)5,1,1和1,5,1 是同一种分法。 输入 每个用例包含二个整数M和N。

0<=m<=10, 1<=n<=10。<=n<=10<样例输入 73 样例输出 8 /\*\* \* 计算放苹果方法数目

- \* @param n 盘子数目数 \* @return 放置方法总数 \* \*/ public static int count(int m, int n)
- 63. 写出一个程序,接受一个十六进制的数值字符串,输出该数值的十进制字符串。









