**程设作业 第三章**

**1.**

**#include<stdio.h>**

**void main()**

**{**

**int a,b,c,d,e,f,g,h,i,j,num;**

**a=b=c=d=e=f=g=h=i=j=0;**

**printf("请输入一个整数：\n");**

**while((num=getchar())!='\n')**

**{**

**switch(num)**

**{**

**case '0':a++;break;**

**case '1':b++;break;**

**case '2':c++;break;**

**case '3':d++;break;**

**case '4':e++;break;**

**case '5':f++;break;**

**case '6':g++;break;**

**case '7':h++;break;**

**case '8':i++;break;**

**case '9':j++;break;**

**default:break;**

**}**

**}**

**printf("0 1 2 3 4 5 6 7 8 9\n");**

**printf("%d%3d%3d%3d%3d%3d%3d%3d%3d%3d\n",a,b,c,d,e,f,g,h,i,j);**

**}**

**5.**

**#include<stdio.h>**

**void main()**

**{**

**int x,y,z;**

**printf("百鸡问题解\n");**

**for(x=0;x<=100;x++)**

**for(y=0;y<=100-x;y++)**

**{z=100-x-y;**

**if(z%3!=0) continue;**

**if(5\*x+3\*y+z/3==100)**

**printf("\tx=%3d y=%3d z=%3d\n",x,y,z);**

**}**

**printf("\n");**

**}**

**13.**

**3 5 7 11 13**

**18.**

**#include<stdio.h>**

**#include<math.h>**

**void main()**

**{**

**unsigned long f0=0,f1=1,f2,fi;**

**int i=1;**

**double c;**

**do**

**{**

**f2=f0+f1;**

**f0=f1;**

**f1=f2;**

**c=(1.0+sqrt(5))/2.0;**

**i++;**

**fi=(long)(pow(c,i)/sqrt(5)+0.5);**

**}while(fi==f2);**

**printf("递推计算的f%d=%ld\n用公式计算的f%d=%ld\n",i,f2,i,fi);**

**}**

**20.**

**#include<stdio.h>**

**void main()**

**{**

**int x,s,y;**

**printf("请输入一个正整数\n");**

**scanf("%d",&x);**

**y=x;s=0;**

**while(x)**

**{s=s\*10+x%10;x/=10;**

**}**

**printf("%d%s\n",y,s==y?"是回文数":"不是回文数");**

**}**

**21.**

**#include<stdio.h>**

**#include<stdlib.h>**

**void main()**

**{**

**int m,n,i=0,a[100];**

**printf("十进制数 二进制数 八进制数 十六进制数\n");**

**for (n=1;n<=256;n++)**

**{**

**itoa(i, s, 2);**

**printf("%10d%10s%10o%10X\n",i,s,i,i);**

**}**

**printf("\n");**

**}**

**23.**

**#include<stdio.h>**

**int main()**

**{ int n,i;**

**printf("请输入一个自然数n(n>1):\n");**

**scanf("%d",&n);**

**printf("%d=",n);**

**for(i=2;n>1;i++)**

**{ for(;n%i==0;)**

**{printf("%d",i);**

**n/=i;**

**if(n>1) printf("\*");**

**}**

**}**

**printf("\n");**

**return 0;**

**}**

**24.**

**#include<stdio.h>**

**double f(double x) {**

**return x \* x \* x - x \* x - 1;**

**}**

**int sign(double x) {**

**return x >= 0;**

**}**

**int main(){**

**double left = 0, right = 3;**

**double fleft = f(left);**

**double fright = f(right);**

**for(int i = 0; i < 120; i++) {**

**double mid = (left + right) / 2;**

**double fmid = f(mid);**

**if(sign(fmid) == sign(fright)) {**

**right = mid;**

**fright = fmid;**

**} else {**

**left = mid;**

**fleft = fmid;**

**}**

**}**

**printf("%lf\n", (left + right) / 2);**

**return 0;**

**}**