

1/*****计算圆的面积和周长*****/

```
#include "stdio.h"

#define PI 3.141592654

#define R 2.0

double F1 (double r);

double F2 (double r);

int main()

{

    printf("mianji=%f", F1 (R));

    printf("\tzhouchang=%f\n",F2 (R));

    return 0;

}

double F1 (double r)

{

    return (PI*r*r);

}

double F2 (double r)

{

    return (2.0*PI*r);

}
```

2/* 三个数最大 */

```
#include "stdio.h"

float max3 (float x,float y,float z)

{

    float max=x;

    if(x>y)

    {

        if (z>x)

            max=z;

    }

    else

    {

        if(y>x)

            max=y;

    }

    printf("The max is:%f",max);

}

int main()

{

    float a,b,c;

    printf("Input 3 real numbers:\n");

    scanf("%f%f%f",&a,&b,&c);

    max3 (a,b,c);

    return 0;
```

```

}

3/* 求一元二次方程的解*/

#include "stdio.h"

#include "math.h"

void solv_quadr_equa(float a, float b, float c)
{
    if(a==0.0)
        if(b==0.0)
            printf("no answer due to input error\n");
        else
            printf("the signgle root is %f\n", -c/b);
        else
        {
            double disc, twoa, term1, term2;

            disc=b*b-4*a*c;

            twoa=2*a;

            term1=-b/twoa;

            term2=sqrt(fabs(disc))/twoa;

            if(disc<0.0)
                printf("complex root:\n real part=%f, imag part=%f\n", term1, term2);
            else
                printf("real root:\n root1=%f, root2=%f\n", term1+term2, term1-term2);
        }
}

void main()
{
    float a, b, c;

    printf("Input 3 reals numbers:\n");

    scanf("%f%f%f", &a, &b, &c);

    solv_quadr_equa(a, b, c);

    return 0;
}

```

4/* 求十年之后的人口 */

```

#include "stdio.h"

int main()
{
    double m=13;

    int i=1;

    while(i<=10)
    {
        m=m*(1+0.002);

        i++;
    }

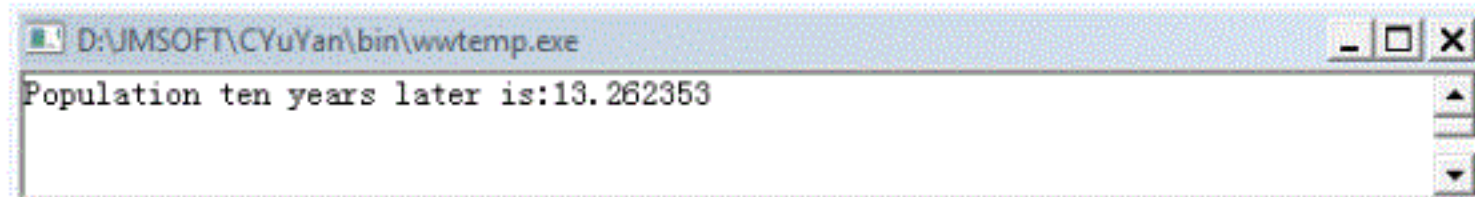
    printf("Population ten years later is:%f\n", m);
}

```

```

    return 0;
}

```



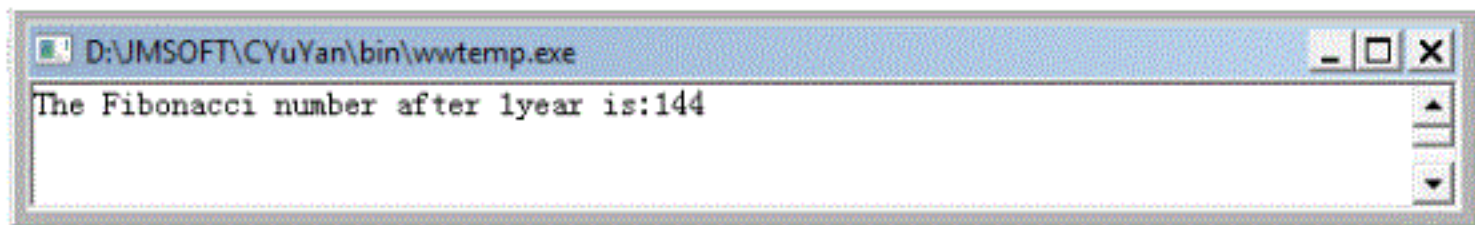
5/* 计算Fibonacci数 */

```

#include "stdio.h"

void main()
{
    int fib1=1, fib2=1, fib, i=3;
    while(i<=12)
    {
        fib=fib1+fib2;
        fib1=fib2;
        fib2=fib;
        i++;
    }
    printf("The Fibonacci number after 1year is:%d\n", fib);
}

```



6/*百钱买百鸡 */

```

#include "stdio.h"

void main()
{
    int cocks=0;
    printf("%8s%8s%8s\n", "cocks", "hens", "chicks");
    while(cocks<=19)
    {
        int hens=0;
        while(hens<=33)
        {
            int chicks;
            chicks=100-cocks-hens;
            if(5*cocks+3*hens+chicks/3.0==100)
                printf("%8d%8d%8d\n", cocks, hens, chicks);
            hens++;
        }
        cocks++;
    }
}

```

```

return 0;
}

```



7 用 c 语言描述下列命题

(1) a 小于 b 或 a 小于 c.	(1) $a < b \vee a < c$
(2) a 或 b 都大于 c.	(2) $a > c \wedge b > c$
(3) a 和 b 其中之一小于 c.	(3) $a < c \vee b < c$
(4) a 是非正整数	(4) $!(a > 0 \wedge (int)a == a)$
(5) a 是奇数.	(5) $a \% 2 == 1$
(6) a 不能被 b 整除	(6) $a \% b != 0$
(7) 角 A 在第一象限或者第三象限.	(7) $\#define PI 3.1415 (A > 0 \wedge A < PI/2) \vee (A > PI \wedge A < 3*PI/2)$
(8) a 是一个带小数的正数, 而 b 是一个带小数的负数.	(8) $(a > 0 \wedge (int)a != a) \wedge (b < 0 \wedge (int)b != b)$

8 写出下列表达式的值

(1) $1 < 4 \wedge 4 < 7$	值为 1
(2) $1 < 4 \wedge 7 < 4$	值为 0
(3) $!(2 < 5)$	值为 0
(4) $!(1 < 3) \vee (2 < 5)$	值为 1
(5) $!(4 < 6) \wedge (3 < 7)$	值为 1

9 若 x=3, y=2, z=4, 求下列表达式的值。

1) $(z > y > x) ? 1 : 0$	1) $z > y$ 为 1, 而 $1 > x$ 为 0, \therefore 表达式的值为 0
2) $z > y \wedge y > x$	1) $z > y$ 为 1, 而 $y > x$ 为 1; $1 \wedge 1$ 为 1.

10 若 x=3, y=2, z=1 求下列表达式的值

1) $x < y ? y : x$	1) $x < y$ 为 0, 故 $x < y$ 为假, 结果为 x.
2) $x < y ? x++ : y++$	1) $x < y$ 为假, 故 $y++$ 即值为 $2+1=3$
3) $z += (x < y ? x++ : y++)$	2) $x < y$ 为假, 故值为 3, 则 $z+=3$, 最终的值为 4

12 写出以下程序段的输出结果。

```

(1) int x=40, y=4, z=4;

```

```

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

```

```

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

```



```

(3) int x=1, y=1, z=1;

```

```

    y=y+z;

```

```

    x=x+y;

```

```

    printf("%d\n", x<y?y:x);

```

```

    printf("%d\n", x<y?x++:y++);

```

```

printf("%d\n", x);
printf("%d\n", y);

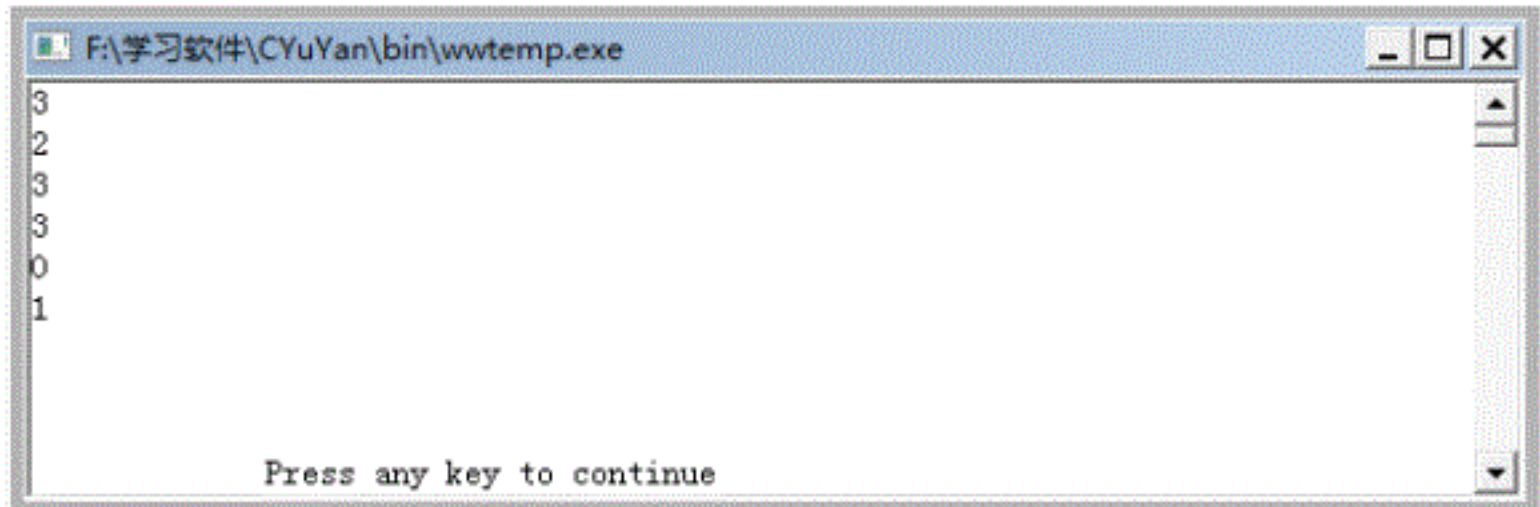
x=3;

y=z=4;

printf("%d\n", (x>=y)?x:0);

printf("%d\n", z>=y&&y>=x);

```

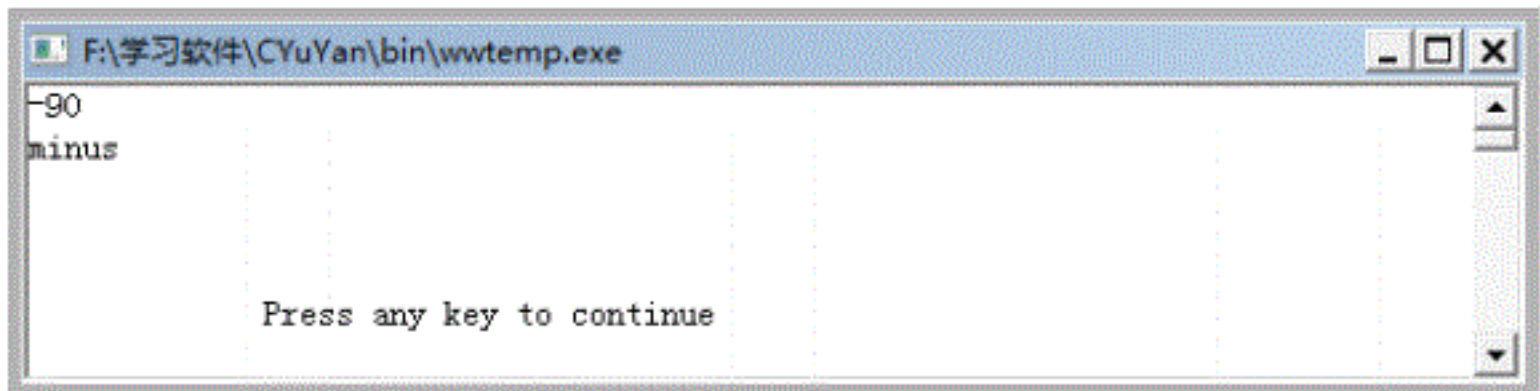


(4) #include "stdio.h"

```

int main()
{
    int a;
    scanf("%d", &a);
    if(a>=0)
        printf("plus\n");
    else
        printf("minus\n");
    return 0;
}

```

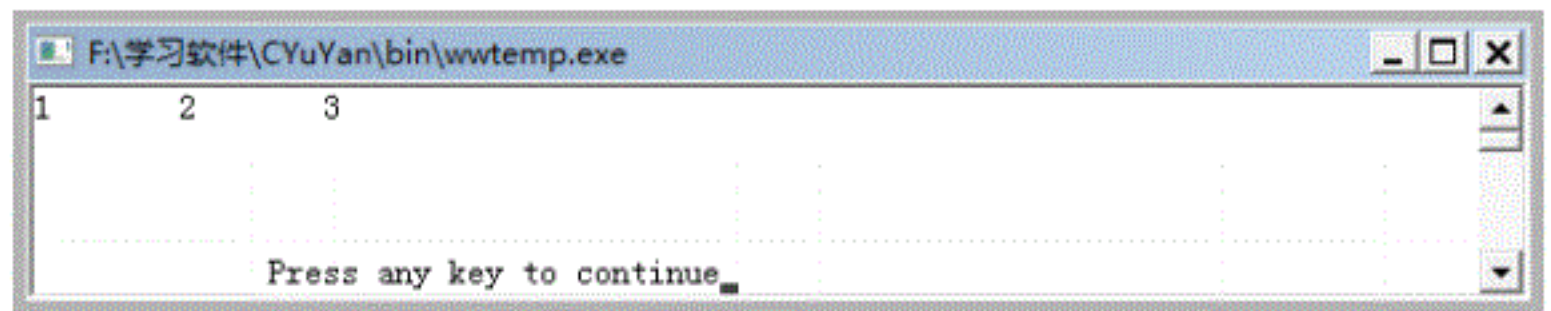


(6) #include "stdio.h"

```

int main()
{
    int n=0;
    while(n++<=1)
        printf("%d\t", n); (如果没有大括号, 就代表他接下来这一句是属于上面那句的)
        printf("%d\n", n); (先引用后增值, 所以, n不会到while语句中, 直接增值, 故为3)
    return 0;
}

```



13设计c语言程序，判断所输入年份是否为闰年

```
/* 判断所输入年份是否为闰年 */
#include "stdio.h"
void main()
{
    char ch;
    int year;
    do
    {
        printf("enter the year\n");
        scanf("%d",&year);
        if(year%4!=0)
            if(year%100!=0)
                printf("%d is LEAP!\n",year);
            else if(year%4000==0)
                printf("%d is LEAP!\n",year);
            else
                printf("%d is NOT LEAP!\n",year);
        else
            printf("if Continued,press Y,otherwise press any key abort\n");
        scanf("%ls",&ch);
    }
    while(ch=='Y' || ch=='y');
}
```

14/* 计算三角形的面积 */

```
#include "stdio.h"
#include "math.h"
void main()
{
    double a,b,c,s;
    printf("input 3 real numbers:\n");
    scanf("%lf%lf%lf",&a,&b,&c);
    if ((a+b)>c&&(b+c)>a&&(a+c)>b)
    {
        s=(a+b+c)*0.5;
        printf("\nArea of the triangle is %lf\n",sqrt(s*(s-a)*(s-b)*(s-c)));
    }
    else
```

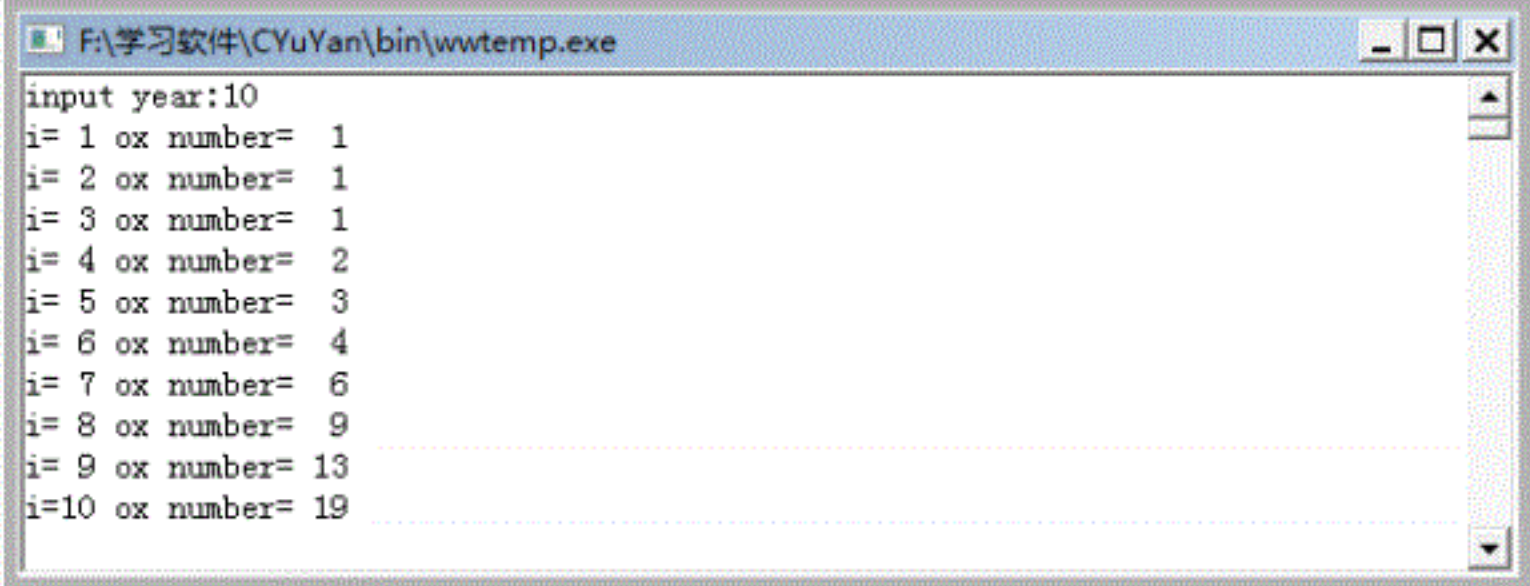
```

        printf("It's not a triangle\n");
    }
}
15/* 第n年母牛数 */
#include "stdio.h"
int main(void)
{
    int i, year, oxNum, oxNum1, oxNum2, oxNum3;

    printf("input year:");
    scanf("%d", &year);
    for(i=1; i<=year; i++)
    {
        if(i<4)
            oxNum=oxNum1=oxNum2=oxNum3=1;
        else
        {
            oxNum=oxNum1+oxNum3;
            oxNum3=oxNum2;
            oxNum2=oxNum1;
            oxNum1=oxNum;
        }
        printf("i=%2d ox number=%3d\n", i, oxNum);
    }

    return 0;
}

```



```

F:\学习软件\CYuYan\bin\wwtemp.exe
input year:10
i= 1 ox number= 1
i= 2 ox number= 1
i= 3 ox number= 1
i= 4 ox number= 2
i= 5 ox number= 3
i= 6 ox number= 4
i= 7 ox number= 6
i= 8 ox number= 9
i= 9 ox number= 13
i=10 ox number= 19

```

```

16/* 递归计算n!的函数 */
#include "stdio.h"
long rfact(int n)
{
    if(n<0)
    {
        printf("It is no meaning.\n");
        return (-1);
    }
}

```



```

        else if(n<=1)
            return (1);
        else
            return(n*rfact(n-1));
    }
int main()
{
    int a;

    printf("please input a number:\n");
    scanf("%d",&a);

    rfact(a);

    printf("%d\n",rfact(a));

    return 0;
}

```



/*正序反序显示*/

```

#include "stdio.h"

#define N 10

int main()
{
    int i;
    int student_age[N];
    for(i=0;i<=N;i++)
    {
        printf("input a age:");
        scanf("%d",&student_age[i]);
    }

    for(i=0;i<=N;i++)
        printf("%6d",student_age[i]);
    printf("\n");
    for(i=N;i>=0;i--)
        printf("%6d",student_age[i]);
    printf("\n");

    return 0;
}

```

~~~~~

```

#include "stdio.h"

```

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```

#include "stdlib.h"

int main()
{
    int i, age;

    int student_age[]={10, 15, 12, 14, 13, 11, 16, 19, 17, 18};

    printf("请输入要查找的年龄:");

    scanf("%d", &age);

    for(i=0; i<10; i++)

        if(student_age[i]==age)
        {
            printf("第%d位学生的年龄是%d.\n", i+1, student_age[i]);

            return 0;
        }

    printf("找不到这个年龄的学生.\n");

    return 0;
}

```

#### 19/\* 折半查找学生年龄 \*/

```

#include "stdio.h"
#include "stdlib.h"

#define N 19

int main()
{
    int a[N]={2, 5, 6, 7, 8, 13, 15, 17, 19, 21, 23, 25, 26, 27, 28, 35, 41, 52, 63};

    int mid, top, bot, x;

    top=0;
    bot=N-1;

    printf("请输入要查找的元素:");

    scanf("%d", &x);

    while(top<=bot)
    {
        mid=(top+bot)/2;

        if(x==a[mid])
        {
            printf("\n找到的元素%d是:a[%2d]\n", x, mid);

            return 0;
        }

        else if(x>a[mid])
            top=mid+1;

        else bot=mid-1;
    }

    printf("没有找到该元素.\n");

    return 0;
}

```

20/\*\*\*\*\* 冒泡排序 \*\*\*\*\*/

```

#include <stdio.h>

#define N 8

int main ( )
{
    int a[N]={9, 8, 3, 7, 5, 2, 6, 1};
    int i, j, temp;
    for(j=0; j<=N-2; j++)
    {
        for(i=0; i<=N-j-1; i++)
            if (a[i]>a[i+1]) {temp=a[i]; a[i]=a[i+1]; a[i+1]=temp;}
    }

    printf("\n排序结果: ");
    for(i=0; i<=N-1; i++)
        printf("%3d", a[i]);

    printf("\n");

    return 0;
}

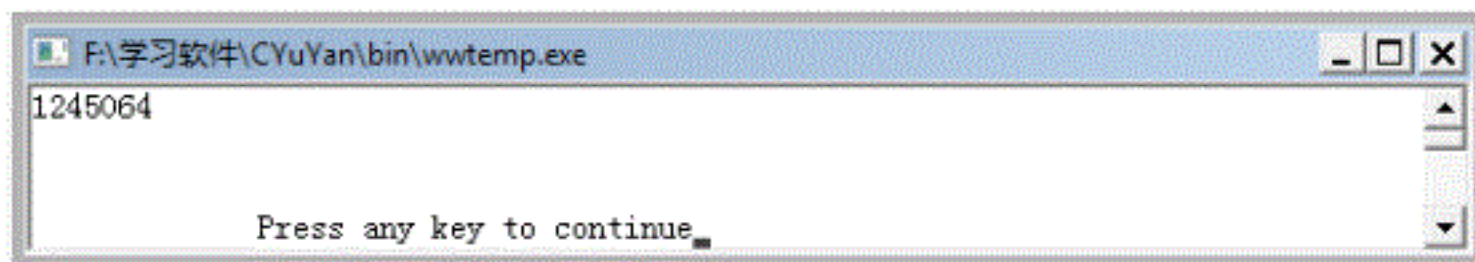
```

**21** #include "stdio.h"

```

void main()
{
    int a[2]={0}, i, j, k=2;
    for(i=0; i<k; i++)
    for(j=0; j<k; j++)
        a[j]=a[i]+1;
    printf("%d", a[k]);
}

```

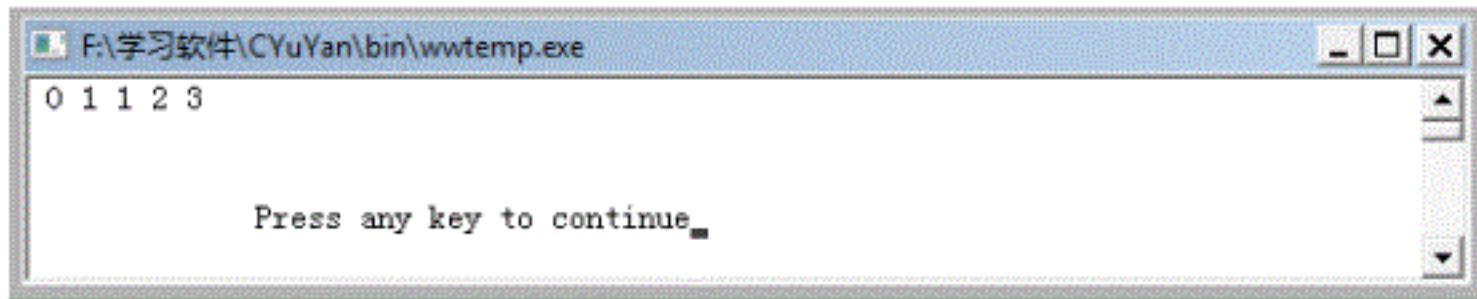


#include "stdio.h"

```

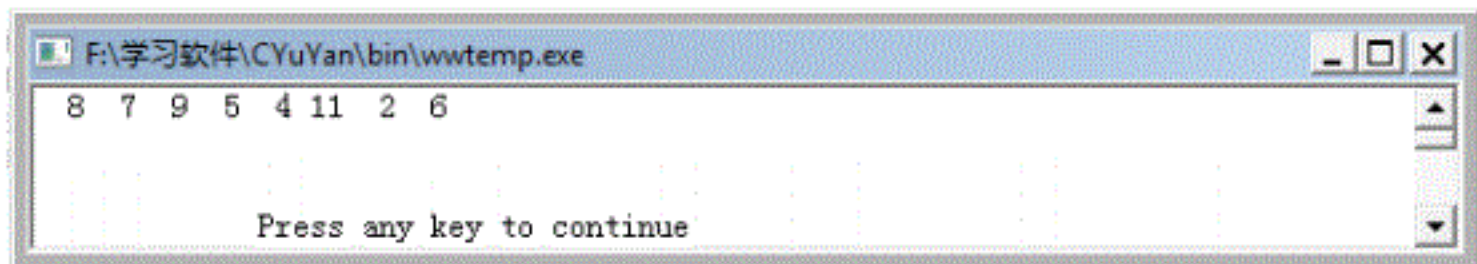
void main()
{
    int a[6], i;
    for(i=1; i<6; i++)
    {
        a[i]=6*(i-1+4*(i/3))%5;
        printf("%2d", a[i]);
    }
}

```



```
#include "stdio.h"

void main()
{
    int i=0, j=7, k, a[8]={6, 2, 11, 4, 5, 9, 7, 8};
    while(i<j)
    {k=a[i];a[i]=a[j];a[j]=k;i++;j--;}
    for(i=0;i<8;i++)
    printf("%3d",a[i]);
}
```



22 有 17 个人围成一圈，开始报数。凡报 3 的人就退出，下一个人又从一开始报数，直到最后只剩下一个人为止。请问此人原来的位置是多少？

```
#include "stdio.h"

void main()
{
    int p[18]={0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17};
    int i=1, j=1, k=1, m=17;
    do
    {
        if(p[i])
        {
            if(j++>=3)
            {
                p[i]=0;
                j=1;
                m--;
            }
            else
            {
                k=i;
                if(m==1) break;
            }
        }
        if(i>=17)
        {
            i=1;
        }
    }
}
```

```

        i++;
    }

    while(1);

    printf("\n%d",k);

    return 0;
}

```

```

23#include "stdio.h"

void main()
{
    int a[6][6], i, j;

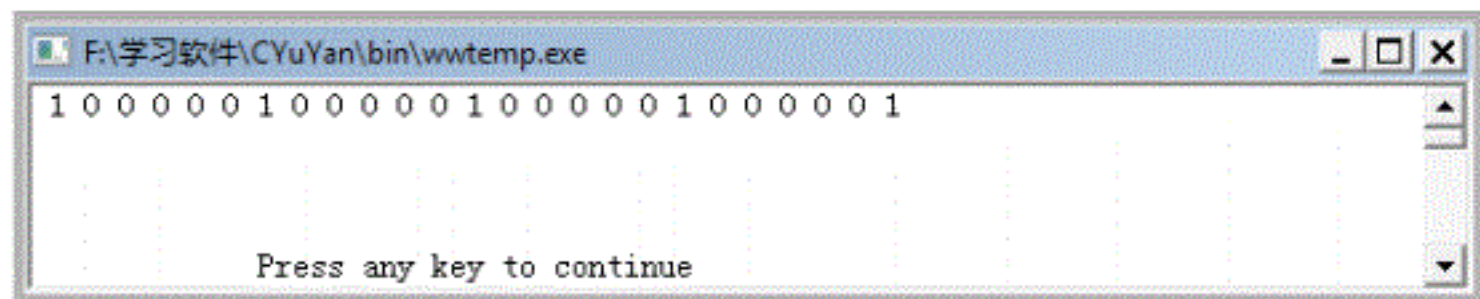
    for(i=1; i<6; i++)
        for(j=1; j<6; j++)
            a[i][j]=(i/j)*(j/i);

    for(i=1; i<6; i++)
    {
        for(j=1; j<6; j++)
            printf("%2d", a[i][j]);

    }

    printf("\n");
}

```



```

#include "stdio.h"

void main()
{
    int i, j, row, col, m;

    int arr[3][3]={{100, 200, 300}, {228, 172, -130}, {-748, 42, 634}};

    m=arr[0][0];

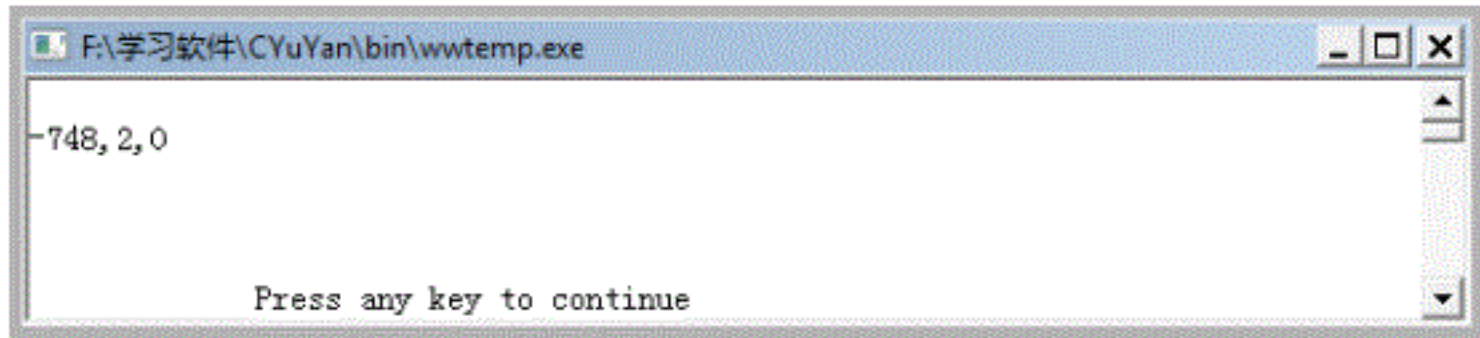
    for(i=0; i<3; i++)
        for(j=0; j<3; j++)
            if(arr[i][j]<m)
            {
                m=arr[i][j];

                row=i;

                col=j;
            }

    printf("\n%d, %d, %d\n", m, row, col);
}

```



24 (1) 对于说明 `double x,*p;` 正确的表达式是: ( )

|                           |                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------|
| A. <code>p=&amp;x</code>  | 正确                                                                                        |
| B. <code>p=x</code>       | 错误: <code>x</code> 为 <code>double</code> 型, <code>p</code> 是指向 <code>double</code> 型的指针类型 |
| C. <code>*p=&amp;x</code> | 错误: <code>x</code> 是指针 <code>p</code> 的引用, 而 <code>&amp;x</code> 是地址                      |
| D. <code>*p=x</code>      | 错误: <code>p</code> 为空指针, 不能赋值                                                             |

(2) 对于说明 `double x=3.141593,*pointer&x;`

均表示地址的表达式是: ( )

|                                                                       |                                                  |
|-----------------------------------------------------------------------|--------------------------------------------------|
| A. <code>&amp;x, &amp;*pointer, &amp;pointer</code>                   | 正确                                               |
| B. <code>* &amp;x, * (&amp;pointer), &amp;pointer</code>              | 给出变量 <code>x</code> 的地址                          |
| C. <code>&amp; ( &amp; (*pointer)), &amp; (*pointer), *pointer</code> | 给出指针变量 <code>x</code> 的地址                        |
| D. <code>&amp; ( *&amp;pointer), *&amp;pointer, *&amp;*pointer</code> | 给出变量 <code>x</code> 的指针 <code>pointer</code> 的地址 |

(3) 对于说明 `int *p1,*p2,a=5,b;` 均为正确的赋值语句为 ( )

- A. `p1=&a;p2=&p1;`
- B. `p1=&a;p2=&b;*p1=p2;`
- C. `p1=&a;p2=p1;`
- D. `*p2=b;*p2=*p1;`
- E. `p2=p1;p1=&a;`
- F. `*p2=a;`

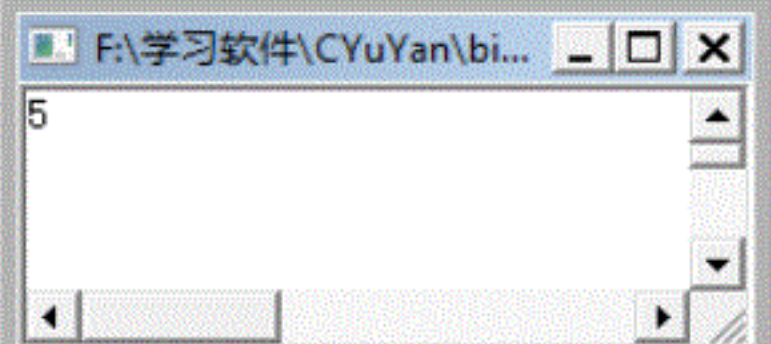
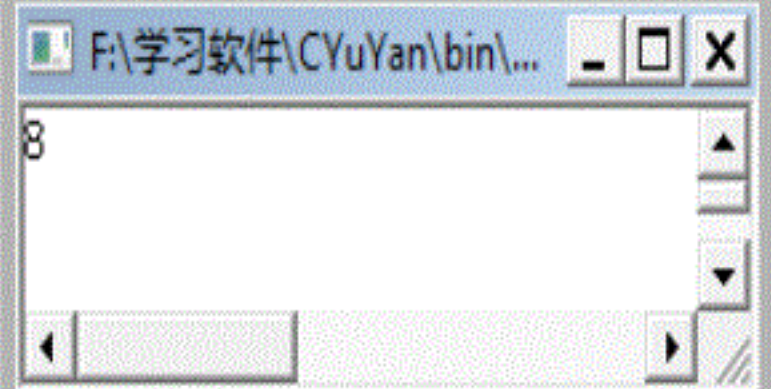
(4) 对于说明 `int *p1,*p2,a=5,b;`

`char *q,ch;`

正确的程序段是 ( )

|                                                                                                                                         |                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <p>A. <code>main()</code></p> <pre>{     *p=99; }</pre> <p>错误: 指针没有被初始化之前不能被使用</p>                                                      | <p>B. <code>main()</code></p> <pre>{     p=&amp;ch;     s=p; }</pre> <p>错误: 地址类型与指针类型不一致, 不可互相赋值</p> |
| <p>C. <code>main()</code></p> <pre>{     p=&amp;i;     q=ch;     p=q; }</pre> <p>错误: <code>p</code> 与 <code>q</code> 的类型不一致, 不可互相赋值</p> | <p>D. <code>main()</code></p> <pre>{     p=&amp;i;     q=ch;     *p=55;     *q=*p; }</pre> <p>正确</p> |

25 阅读程序, 指出程序的运行结果

|                                                                                                                                                                  |                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <pre> (1) #include "stdio.h"  main() {     int n=10, *p=&amp;n;      *p=5;      printf("%d\n", n); } </pre>                                                      |   |
| <pre> (2) #include "stdio.h"  main() {     int a=2, b=4, c=6;      int *pa=&amp;a, *pb=&amp;b, *p;      *(p=&amp;c)=*pa*( *pb);      printf("%d\n", c); } </pre> |  |

26从键盘输入三个整数，要求设3个指针变量p1, p2, p3, 使p1指向3个数中的最大者，p2指向次大者，p3指向最小者。按照由大到小的顺序输出这三个数。

```

#include "stdio.h"

int main()
{
    int *p1, *p2, *p3;
    int a, b, c, t;

    printf("input three numbers\n");
    scanf("%d%d%d", &a, &b, &c);
    p1=&a; p2=&b; p3=&c;

    if(*p1<*p2)
    {
        t=*p1; *p1=*p2; *p2=t;
    }

    if(*p1<*p3)
    {
        t=*p1; *p1=*p3; *p3=t;
    }

    if(*p2<*p3)
    {
        t=*p2; *p2=*p3; *p3=t;
    }

    printf("%d %d %d", *p1, *p2, *p3);

    return 0;
}

```

27/\* Note:Your choice is C IDE \*/

```

#include "stdio.h"

int main()

```

```

{
    int a[10]={0,1,2,3,4,5,6,7,8,9},*p=a;
    printf("%d,%d\n",*p+2,*p+2);
    return 0;
}

```



(2)

```

/* Note:Your choice is C IDE */
#include "stdio.h"
int main()
{
    int i;
    int a[10],*p=a;
    for(i=0;i<10;i++)    *p+=2*i;
    for(i=0;i<10;i++) printf("%d,",a[i]);
    printf("\n");
    return 0;
}

```

