

SOLUTION OF EXERCISE CHAPTER 3

Ans:1

```
#include<iostream.h>
#include<conio.h>
#include<iomanip.h>
main()
{
    long a,num;
    clrscr();
    cout<<"enter num (enter number less than or equal to 9999"<<endl;
    cin>>num;
    for(a=1;a<=200;a++)
    {
        cout<<setw(8)<<num*a;
        if(a%10==0)
            cout<<endl;
    }

    getch();
}
```

Ans: 2

```
#include<iostream.h>
#include<conio.h>
main()
{
    int a;
    float b;
    clrscr();
    do
    {
        clrscr();
        cout<<"Pree 1 to convert ftemp to ctemp"<<endl
            <<"press 2 to convert ctemp to ftemp"<<endl
            <<"press 3 to exit"<<endl;
        cout<<"Enter the number =";
        cin>>a;
```

```

if (a==1)
{
    cout<<"Enter the Temperature in Farenhiet= ";
    cin>>b;
    cout<<(b-32)*5/9;
}
else if(a==2)
{
    cout<<"Enter the Temperature in celcius=";
    cin>>b;
    cout<<(9*b/5)+32;
}
else if (a==3)
{
    cout<<"bye"<<endl;
}
else
{
    cout<<"Invalid entry";
}
getch();
}
while (a!=3);
}

```

Ans:3

```

#include<iostream.h>
#include<conio.h>
void main(void)
{
    int i;
    long _output;
    char char_input;
    clrscr();
    do
    {
        clrscr();
        cout<<"Enter a number (Maximum six characters): ";

```

```

_output = 0;
i=0;
while((char_input=getche()) != 13 && i<6)
{
    _output = 10*_output + (char_input - 48);
    i++;
}
if(i == 6)
{
    cout<<"\b ";
}
cout<<endl<<endl<<"number is: "<<_output<<endl;
cout<<endl<<endl<<"!Press c to continue or any key to exit."<<endl<<endl;
}
while(getch()=='c');
}

```

Ans: 4

```

#include <iostream.h>
#include <conio.h>
void main (void)
{
    double n1, n2, ans;
    char oper, ch;
    clrscr();
    do
    {
        clrscr();
        cout <<"Enter first number, operator, second number:";
        cin >> n1 >> oper >> n2;
        switch(oper)
        {
            case '+': ans = n1 + n2; break;
            case '-': ans = n1 - n2; break;
            case '*': ans = n1 * n2; break;
            case '/': ans = n1 / n2; break;
            default: ans = 0;
        }
    }
}

```

```

cout << "Answer = " << ans;
cout << endl<<"Do another (Enter y or n)? "<<endl;
cin >> ch;
if (ch=='n')
{
    clrscr();
    cout<<"bye bye"<<endl;
}
else
{
}
}
while( ch != 'n' );
getch();
}

```

Ans:5

```

#include<iostream.h>
#include<conio.h>
void main(void)
{
    do
    {
        for(int i=0; i<20; i++)
        {
            for(int x=0 ; x<20 ; x++)
            {
                cout<<" "; //This line optional to make the pyramid on the middle.
            }
            for(int j=20-i; j>0 ; j--) cout<<" ";
            {
                for(int k=0 ; k<2*i+1; k++) cout<<"X";
            }
            cout<<endl;
        }
        cout<<"\n\n !Press c to continue or any key to exit."<<endl<<endl;
    }
    while(getch()=='c');
}

```

OR

```
#include<iostream.h>
#include<conio.h>
main()
{
    clrscr();

    int length,i,j,k;

    cout<<"enter length of Paramid"<<endl;
    cin>>length;

    for(i=1;i<=length;i++)
    {
        for(j=0;j<length+20-i;j++)
            cout<<" ";

        cout<<"X";

        for(k=1;k<i;k++)
            cout<<"XX";
        cout<<endl;
    }
    getch();
}
```

Ans: 6

```
#include<iostream.h>
#include<conio.h>
void main(void)
{
    unsigned int numb, i;
    unsigned long fact;
    clrscr();
    cout<<"Enter a number: ";
    cin >>numb;
    do
    {
```

```

    fact=1;
    i=0;
    for(i=numb; i>0; i--)
    {
        fact *= i;
    }
    cout<<endl<<"Factorial is "<<fact<<endl<<endl;
    cout<<" !Enter 0 to exit or any other number to calculate it's factorial: "<<endl<<endl;
    cin >>numb;
}
while(numb!=0);
}

```

Ans:7

```

#include<iostream.h>
#include<conio.h>
void main(void)
{
    float num_year,init_amount, intrst_rate;
    clrscr();
    do
    {
        clrscr();
        cout<<"Enter initial amount: "<<endl;
        cin >>init_amount;
        cout<<"Enter number of years: " <<endl;
        cin >>num_year;
        cout<<"Enter interest rate (percent per year): "<<endl;
        cin >>intrst_rate;
        for(int i=0; i<num_year; i++)
        {
            init_amount += init_amount*intrst_rate/100;
        }
        cout<<endl<<"At the end of "<<num_year<<endl
        <<endl<<" years, you will have "<<init_amount<<" dollars."<<endl;
        cout<<endl<<"!Press c to continue or any key to exit."<<endl<<endl;
    }
    while(getch()!='c');
}

```

```
    cout<<"Bye bye"<<endl;
    getch();
}
```

Ans:8

```
#include<iostream.h>
```

```
#include<conio.h>
```

```
main()
```

```
{
    int pound1,pound2,shilling1,shilling2,cents1,cents2;
    clrscr();

    cout<<"enter first amount:\x9c";
    cin>> pound1>>shilling1>>cents1;

    cout<<"Enter Second amount:\x9c";

    cin>>pound2>>shilling2>>cents2;
    cents1+=cents2;

    if(cents1>11)
    {
        cents2=cents1%12;
        shilling1=shilling1+cents1/12;
    }

    shilling1+=shilling2;

    if(shilling1>19)
    {
        shilling2=shilling1%20;
        pound2=pound1+pound2+shilling1/20;
    }

    cout<<"total is : \x9c"<<pound2<<". "<<shilling2<<". "<<cents2<<endl;
    getch();
}
```

Ans:9

```
#include<iostream.h>
#include<conio.h>
void main(void)
{
    int ch_num, gs_num, result;
    do
    {
        cout<<"Enter number of guests: ";
        cin >>gs_num;
        cout<<"Enter number of chairs : ";
        cin >>ch_num;
        result=1;
        for(int i=0; i<ch_num; i++)

        {
            result*=(gs_num-i);
        }

        cout<<"The number of possible arrangements is : "<<result;
        cout<<endl<<endl<<" !Press c to continue or any key to exit."<<endl<<endl;
    }
    while(getch()=='c');
    getch();
}
```

Ans:10

```
#include<iostream.h>
#include<conio.h>
void main(void)
{
    int i;
    float init_amount, intrst_rate, finl_amount;
    do
    {
        cout<<"Enter initial amount: ";
        cin >>init_amount;
        cout<<"Enter interest rate (percent per year): ";
```

```

cin >>intrst_rate;
cout<<"Enter final amount: ";
cin >>finl_amount;
i=0;
while(finl_amount>=init_amount)
{
    finl_amount -= finl_amount*intrst_rate/100; i++;
}
cout<<"Number of years is : "<<i;
cout<<endl<<endl<<" !Press c to continue or any key to exit."<<endl<<endl;
}
while(getch()=='c');
getch();
}

```

Ans:12 (not checked)

```

#include<iostream.h>
#include<conio.h>
void main(void)
{
    int first[2], last[2];
    char op[2];
    do
    {
        cout<<"Enter your task : ";
        cin >>first[0]>>op[0]>>last[0]>>op[1]
        >>first[1]>>op[0]>>last[1];

        if(!last[0] || !last[1])
        {
            cout<<"Illeagle fraction !"<<endl;
            op[1] = false;
        }

        switch(op[1])
        {
            case '+':
                cout<<"Answer = "<<(first[0]*last[1] + last[0]*first[1])<<op[0]<<(last[0]*last[1]);

```

```

break;

case '-':
cout<<"Answer = "<<(first[0]*last[1] - last[0]*first[1])<<op[0]<<(last[0]*last[1]);
break;

case '*':
cout<<"Answer = "<<first[0]*first[1]<<op[0]<<last[0]*last[1];
break;

case '/':

if(first[1] != 0)
{
    cout<<"Answer = "<<first[0]*last[1]<<op[0]<<first[1]*last[0];
}
else
{
    cout<<"Math error !"<<endl;
}

break;
default:

cout<<"Unknow operator please try again !"<<endl;

}

cout<<endl<<endl" !Press c to continue or any key to exit."<<endl<<endl;
}

while(getch()=='c');
getch();
}

```

Ans 5: (upside down pyramid)

```

#include<iostream.h>
#include<conio.h>

```

```
main()
{
    clrscr();

    int length,i,j,k;

    cout<<"enter length of Paramid"<<endl;
    cin>>length;

    for(i=length;i>=1;i--)
    {
        for(j=0;j<length+20-i;j++)
            cout<<" ";

        cout<<"X";

        for(k=1;k<i;k++)
            cout<<"XX";
        cout<<endl;
    }

    getch();
}
```