```
#include<iostream.h>
#include<graphics.h>
#include<math.h>
#include<conio.h>
#include<dos.h>
int main()
{
int gd=DETECT,gm,s;
initgraph(&gd,&gm,(char*) "c:\\turboc3\\BGI");
cout<<"1.translation\n2.rotation\n3scaling\n
4.reflection\n5.shearing"<<endl;
cout<<"selection";
cin>>s;
switch(s)
{
 case 1:
 {
 int x1=200,y1=150,x2=300,y2=250;
 int tx=50,ty=50;
 cout<<"rectangle before translation"<<endl;
 setcolor(3);
 rectangle(x1,y1,x2,y2);
 setcolor(4);
 cout<<"rectangle after translation"<<endl;
 rectangle(x1+tx,y1+ty,x2+tx,y2+ty);

 getch();
 break;
 }
 case 2:
 {
 long x1=200,y1=200,x2=300,y2=300;
 double a;
 cout<<"rectangle with rotation"<<endl;
 setcolor(3);
 rectangle(x1,y1,x2,y2);
 cout<<"angle of rotation";
 cin>>a;
 a=(a*3.14)/180;
 long xr=x1+((x2-x1)*cos(a)-(y2-y1)*sin(a));
 long yr=y1+((x2-x1)*sin(a)+(y2-y1)*cos(a));
 setcolor(2);
 rectangle(x1,y1,xr,yr);

 getch();
 break;
 }
 case 3:
 {
     int x1=30,y1=30,x2=70,y2=70,y=2,x=2;
     cout<<"before scaling"<<endl;
     setcolor(3);
     rectangle(x1,y1,x2,y2);
     cout<<"after scaling"<<endl;
     setcolor(10);
     rectangle(x1*x,y1*y,x2*x,y2*y);

     getch();
```

```
    break;
    }
case 4:
{
int x1=200,y1=300,x2=500,y2=300,x3=350,y3=400;
cout<<"triangle before reflection"<<endl;
setcolor(3);
line(x1,y1,x2,y2);
line(x1,y1,x3,y3);
line(x2,y2,x3,y3);
cout<<"triangle after reflection"<<endl;
setcolor(5);
line(x1,-y1+500,x2,-y2+500);
line(x1,-y1+500,x3,-y3+500);
line(x2,-y2+500,x3,-y3+500);

getch();
break;
}
case 5:
{
 int  x1=200,y1=50,x2=300,y2=50,x3=200,y3=100,x4=300,y4=100,shx=2;
cout<<"before shearing of rectangle"<<endl;
setcolor(3);
line(x1,y1,x2,y2);
line(x1,y1,x3,y3);
line(x3,y3,x4,y4);
line(x2,y2,x4,y4);
cout<<"after shearing of rectangle"<<endl;
x1=x1+shx*y1;
x2=x2+shx*y2;
x3=x3+shx*y3;
x4=x4+shx*y4;
setcolor(13);
line(x1,y1,x2,y2 );
line(x1,y1,x3,y3);
line(x3,y3,x4,y4);
line(x2,y2,x4,y4);
getch();
}
default:
{
cout<<"invalid selection"<<endl;
break;
}
}

closegraph();
return 0;
}
```