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#include<iostream>
#include<graphics.h>
#include<math.h>
using namespace std;
int main()
{
   int gd=DETECT,gm,s;
   initgraph(&gd,&gm,(char*)"");
   cout<<"1.Translation\n2.Rotation\n3.Scaling\n4.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;
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        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);
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            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=400,y1=100,x2=600,y2=100,x3=400,y3=200,x4=600,y4=200,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;
```

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 }
       }closegraph();
   return 0;
}
```