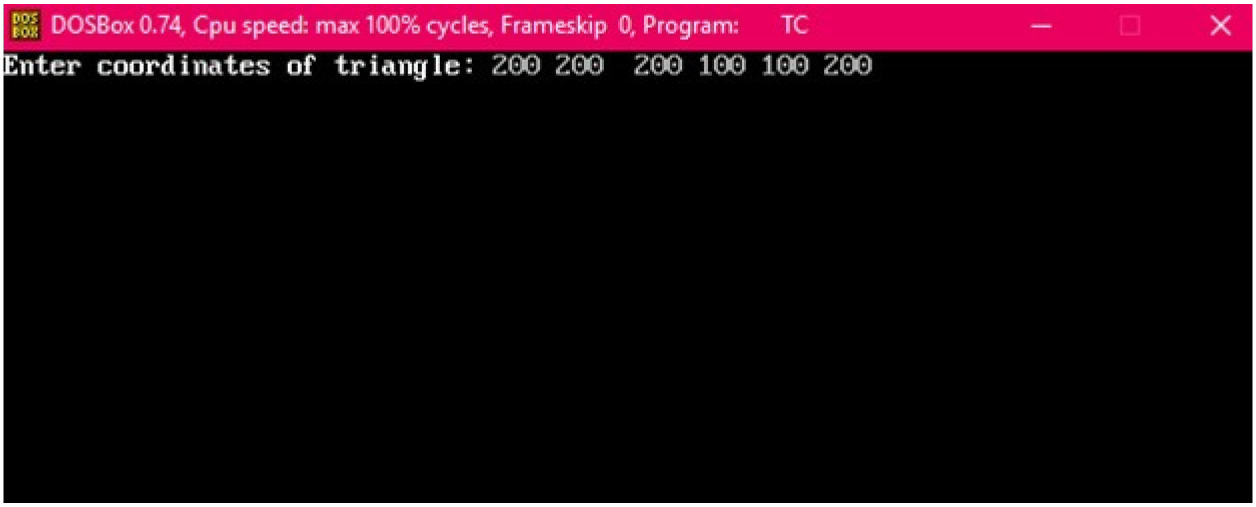
Program to rotate a Triangle:

```
#include<stdio.h>
#include<graphics.h>
#include<math.h>
main()
{
  intgd=0,gm,x1,y1,x2,y2,x3,y3;
  double s,c, angle;
  initgraph(&gd, &gm, "C:\\TURBOC3\\BGI");
  setcolor(RED);
  printf("Enter coordinates of triangle: ");
  scanf("%d%d%d%d%d%d",&x1,&y1,&x2,&y2, &x3, &y3);
  setbkcolor(WHITE);
  cleardevice();
  line(x1,y1,x2,y2);
  line(x2,y2, x3,y3);
  line(x3, y3, x1, y1);
  getch();
  setbkcolor(BLACK);
  printf("Enter rotation angle: ");
  scanf("%lf", &angle);
  setbkcolor(WHITE);
  c = cos(angle *M_PI/180);
  s = sin(angle *M_PI/180);
  x1 = floor(x1 * c + y1 * s);
  y1 = floor(-x1 * s + y1 * c);
  x2 = floor(x2 * c + y2 * s);
  y2 = floor(-x2 * s + y2 * c);
  x3 = floor(x3 * c + y3 * s);
  y3 = floor(-x3 * s + y3 * c);
  cleardevice();
  line(x1, y1 ,x2, y2);
  line(x2,y2, x3,y3);
  line(x3, y3, x1, y1);
  getch();
  closegraph();
  return 0;
}
```

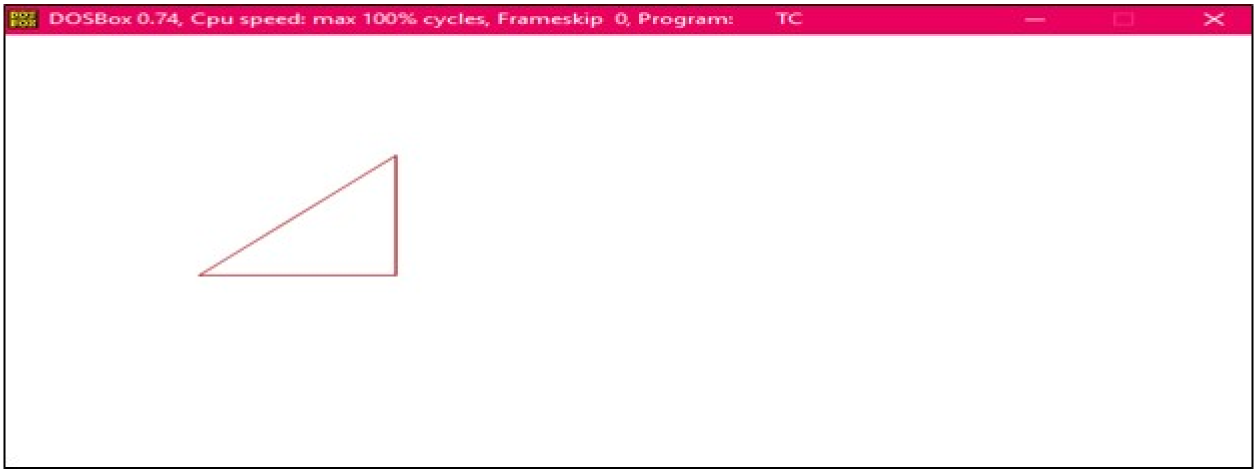
Output:

Before rotation

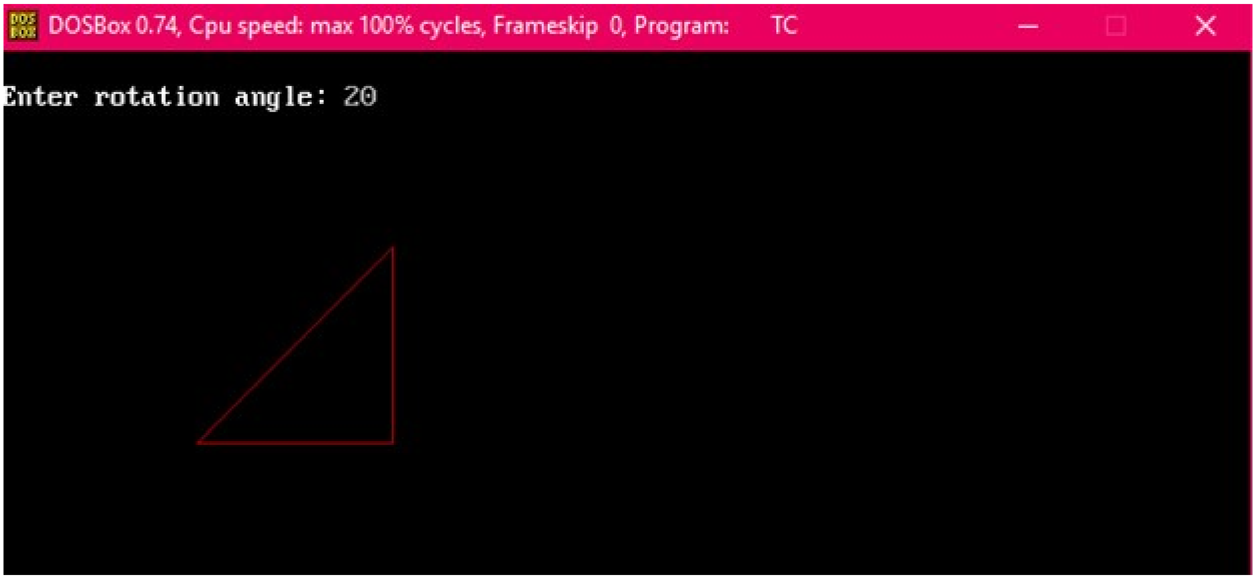


DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

```
Enter coordinates of triangle: 200 200  200 100 100 200
```



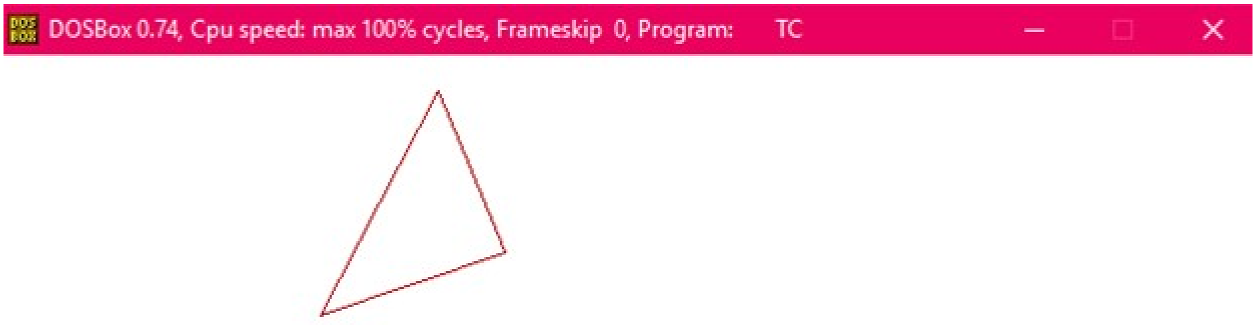
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC



DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

```
Enter rotation angle: 20
```

After rotation


DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC