MIDPOINT ELLIPSE DRWING ALGORITHM IN C

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

void ellipse1(int xc,int yc,int rx,int ry)
 {
   int gm=DETECT,gd;
   int x, y, p;
   clrscr();
initgraph(&gm,&gd,"C:\\TURBOC3\\BGI");
   x=0;
   y=ry;
   p=(ry*ry)-(rx*rx*ry)+((rx*rx)/4);
   while((2*x*ry*ry)<(2*y*rx*rx))
   {
            putpixel(xc+x,yc-y,WHITE);
            putpixel(xc-x,yc+y,WHITE);
            putpixel(xc+x,yc+y,WHITE);
            putpixel(xc-x,yc-y,WHITE);

            if(p<0)
            {
    x=x+1;
    p=p+(2*ry*ry*x)+(ry*ry);
            }
            else
            {
    x=x+1;
    y=y-1;
    p=p+(2*ry*ry*x+ry*ry)-(2*rx*rx*y);
            }
   }
   p=((float)x+0.5)*((float)x+0.5)*ry*ry+(y-1)*(y-1)*rx*rx-rx*rx*ry*ry;

            while(y>=0)
   {
            putpixel(xc+x,yc-y,WHITE);
            putpixel(xc-x,yc+y,WHITE);
            putpixel(xc+x,yc+y,WHITE);
            putpixel(xc-x,yc-y,WHITE);

            if(p>0)
```

```
43.             {
44.      y=y-1;
45.      p=p-(2*rx*rx*y)+(rx*rx);
46.
47.             }
48.             else
49.             {
50.      y=y-1;
51.      x=x+1;
52.      p=p+(2*ry*ry*x)-(2*rx*rx*y)-(rx*rx);
53.             }
54.    }
55.    getch();
56.    closegraph();
57.  }
58.
59.  void main()
60.  {
61.    int xc,yc,rx,ry;
62.    clrscr();
63.    printf("Enter Xc=");
64.    scanf("%d",&xc);
65.    printf("Enter Yc=");
66.    scanf("%d",&yc);
67.    printf("Enter Rx=");
68.    scanf("%d",&rx);
69.    printf("Enter Ry=");
70.    scanf("%d",&ry);
71.    ellipse1(xc,yc,rx,ry);
72.    getch();
73.  }
```