```cpp
/*
5. A) Write a C++ program for drawing a
following pattern(diamond in rectangle)
*/

#include<iostream>
#include<conio.h>
#include<graphics.h>
#include<math.h>
int sign(int x)
{
if(x<0)
return -1;
else if(x>0)
return 1;
else
return 0;
}
void bline(int x1,int y1,int x2,int y2,int col)
{
int dx,dy,e,x,y,i=1;
dx=x2-x1;
dy=y2-y1;
x=x1;
y=y1;
e=2*dy-dx;
while(i<=dx)
{
while(e>=0)
{
y++;
e=e-2*dx;
}
x++;

e=e+2*dy;
putpixel(x,y,col);
i++;
}
}
void ddaline(int x1,int y1,int x2,int y2,int
col)
{
int x,y,len,i;
float dx,dy;
if(x1==x2 && y1==y2)
putpixel(x1,y1,col);
else
{
dx=x2-x1;
dy=y2-y1;
if(dx>dy)
len=dx;
else
len=dy;
```

```c
dx=(x2-x1)/len;
dy=(y2-y1)/len;
x=x1+0.5*sign(dx);
y=y1+0.5*sign(dy);
i=1;
while(i<len)
{
putpixel(x,y,col);
x=x+dx;
y=y+dy;
i++;
}
}
}
int main()
{

int ch,col,x1,x2,y1,y2;
int gd=DETECT,gm;
initgraph(&gd,&gm,NULL);
setbkcolor(WHITE);
ddaline(50,50,50,200,2); //left vert
ddaline(50,50,350,50,4); //up horizontal
ddaline(350,50,350,200,6); //right vert
ddaline(50,200,350,200,7); //down horizontal
ddaline(200,50,50,125,9); //diamond up left
bline(50,125,200,200,12); //diamond left,down
ddaline(350,125,200,200,14);//diamond down,right
bline(200,50,350,125,3); //diamond right,up
ddaline(275,87,275,163,4);//in right
ddaline(125,87,275,87,5);//in up
ddaline(125,87,125,163,6);//in left
ddaline(125,163,275,163,2);//in down
getch();
closegraph();
return 0;
}
```