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Answer(1) program to implement DDA line Drawing Algorithm.

```
#include <graphics.h>
#include <conio.h>
#include <stdio.h>
Void main()
{
int gd = DETECT, gm, i;
float x, y, dx, dy, steps;
int x0, x1, y0, y1;
initgraph(&gd, &gm, "");
setbkcolor (WHITE);
x0 = 100, y0 = 200, x1 = 500, y1 = 300;
dx = (float)(x1-x0);
dy = (float)(y1-y0);
if(dx >= dy)
{
 steps = dx;
}
else
```

```
{
steps = dy;
}

dx = dx / steps;
dy = dy / steps;
x = x0;
y = y0;
i = 1;
while (i <= steps)
{
 putpixel (x, y, RED);
 x += dx;
 y += dy;
 i = i + 1;
}
getch();
closegraph();
}
```

Algorithm

step 1:- Start

step 2:- Declare $x_1, y_1, x_2, y_2, dx, dy, x, y$ as integer variables.

step 3:- Enter value of x_1, y_1, x_2, y_2

step 4:- Calculate $dx = x_2 - x_1$

step 5:- Calculate $dy = y_2 - y_1$

step 6:- if ABS(dx) > ABS(dy)

Then step = abs(dx)

Else

step 7:- x inc = dx / step

y inc = dy / step

assign $x = x_1$

assign $y = y_1$

step 8:- set pixel (x, y)

step 9:- $x = x + x_{inc}$

$y = y + y_{inc}$

set pixel (Round(x), Round(y))

step 10:- Repeat step 9 until $x = x_2$

step 11:- End