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Course: BCA
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Ans 1:

## DDA Algorithm:

Step 1: Start algorithm

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 pixels (Round(x), Round(y))

Step 10 :  Repeat step 9 unit $x = x_2$

Step 11 :  End Algorithm.


Program :

```c
#include <graphics.h>
#include <conic.h>
#include <stdio.h>

void main(){
        int intgd = DETECT, gm, i;
        float x, y, dx, dy, steps;
        int x0, x1, y0, y1;
        intgraph (&gd, &gm, "C:\\TC\\BGI");
        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) {
        Outpixel (x, y, RED);
        x + = dx
        y + = dy;
        i = i+1;
    }
    getch();
    closegraph();

}
```