$\therefore d_{init} = \left(dy - \frac{dx}{2}\right) \cdot 2$

$= 2dy - dx$

$\therefore d_E = 2dy$

$\therefore d_{NE} = 2dy - 2dx = 2(dy - dx)$

Now,

```
void MidPointLine (int x0, int y0, int x1, int y1, int color)
{
  int dx = x1 - x0,  dy = y1 - y0;
  int d_init = 2*dy - dx;
  int dE = 2*dy,  dNE = 2*(dy-dx);
  int x = x0, y = y0;
  WritePixel (x,y, color);
  while (x<x1){
      if (d_init<=0){
       d_init += dE;
        x++; }
      else{
         d_init += dNE;
          x++;
          y++; }
      WritePixel (x,y,color); }
}
```

For → zone-1: Here,

$F(x) = Ax + By + C$

$\therefore F(P) = F(x_p, y_p)$

$= Ax_p + By_p + C$