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

$\therefore d_W = -2dy$

$\therefore d_{NW} = -2dx - 2dy$

Now,

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

For → Zone-7 : Here,

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

$$\therefore F(P) = Ax_p + By_p + C$$

$$\therefore F(M) = F\left(x_p + 1, y_p - \frac{1}{2}\right)$$