Mid Point Line Algorithm ——

We know, $m = \frac{dy}{dx} = \frac{\Delta y}{\Delta x}$

and $y = mx + c'$

$\Rightarrow y - mx - c' = 0$

$\Rightarrow mx - y + c' = 0$

$\Rightarrow \frac{dy}{dx} \cdot x - y + c' = 0 \quad \left[\because m = \frac{dy}{dx}\right]$

$\Rightarrow dy.x - dx.y + dx.c' = 0$

$\therefore dy.x - dx.y + c = 0 \quad [\because dx.c' = c] \quad \ldots\ldots (1)$

We know, line equation is,

$$Ax + By + c = 0 \quad \ldots\ldots (11)$$

From (1) and (11),

$\therefore A = dy \quad$ and $\quad B = -dx$