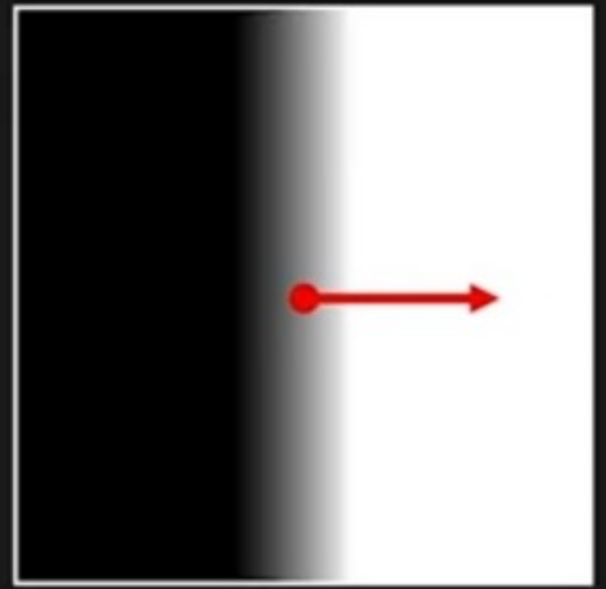
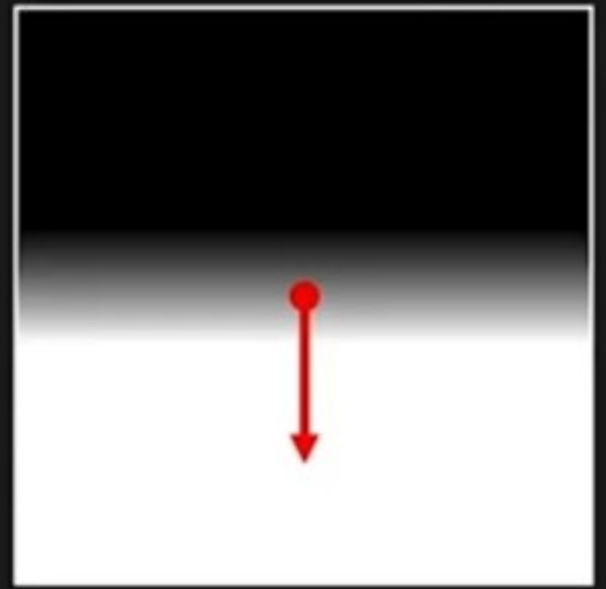
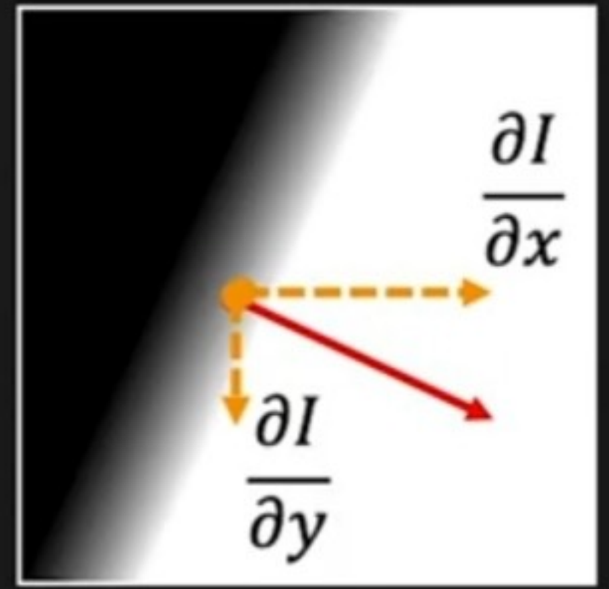
- $\nabla I = [\partial I/\partial x, 0]$






$\frac{\partial I}{\partial x}$
$\frac{\partial I}{\partial y}$

- $\nabla I = [0, \partial I/\partial y]$

- $\nabla I = [\partial I/\partial x, \partial I/\partial y]$

- The resultant vector ∇I represents the direction of change in intensity

Gradient as Edge Detector:

- Gradient Magnitude

  $\nabla I^2=(\delta I/\delta x)^2+(\delta I/\delta y)^2$

- Gradient Magnitude represents the strength of Edge
- Gradient Orientation

  $\Theta= \tan^{-1} ((\partial I/\partial x)/(\partial I/\partial y))$


θ