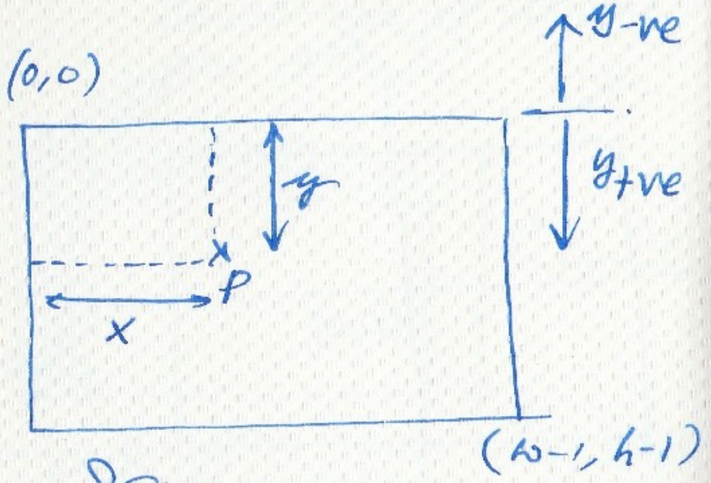
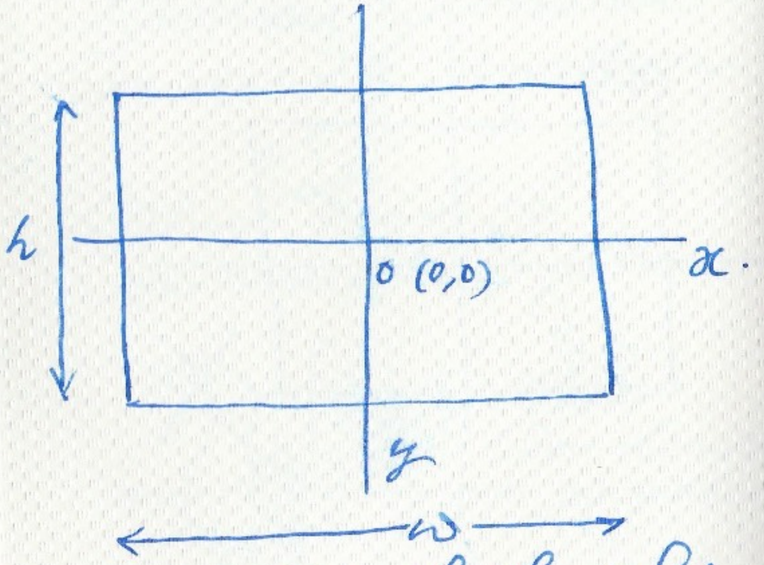
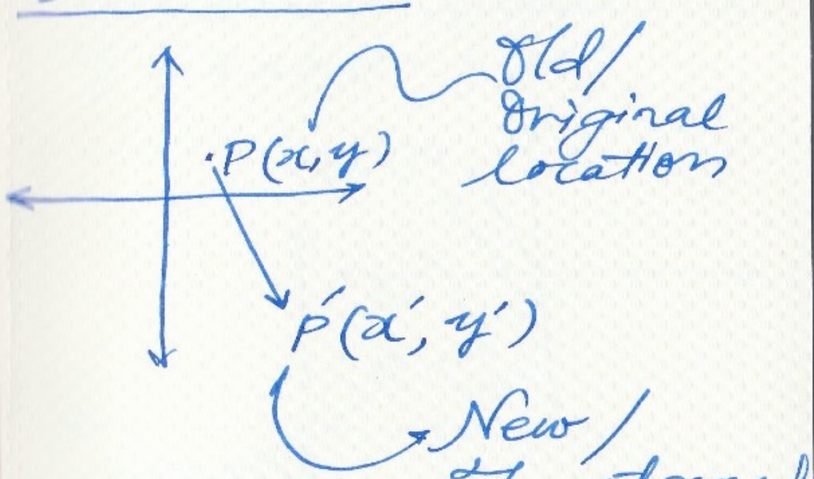


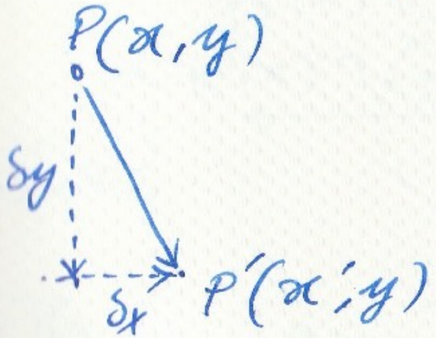

Screen bounds.




w: width, h: height.

## Translation




$$x' = x + \delta x$$
$$y' = y + \delta y .$$

# Rotation

- The second basic transformation is rotation, where you also move a point from one location to another but the new location is yielded by applying a rotation of let’s say by theta angle, of that point by keeping the origin as the pivot.
- Mathematically, this is similar to have an object moving on a circle of the radius as distance between origin and the original point.
- And then, moving along the circumference by theta radians or degrees as given, usually in the clockwise direction.
- This in premise lays foundation for a new coordinate system, which is called as Polar Coordinate System. The origin can instead be called as Pole.