CLASS XI MATHS ASSIGNMENT Continuation....

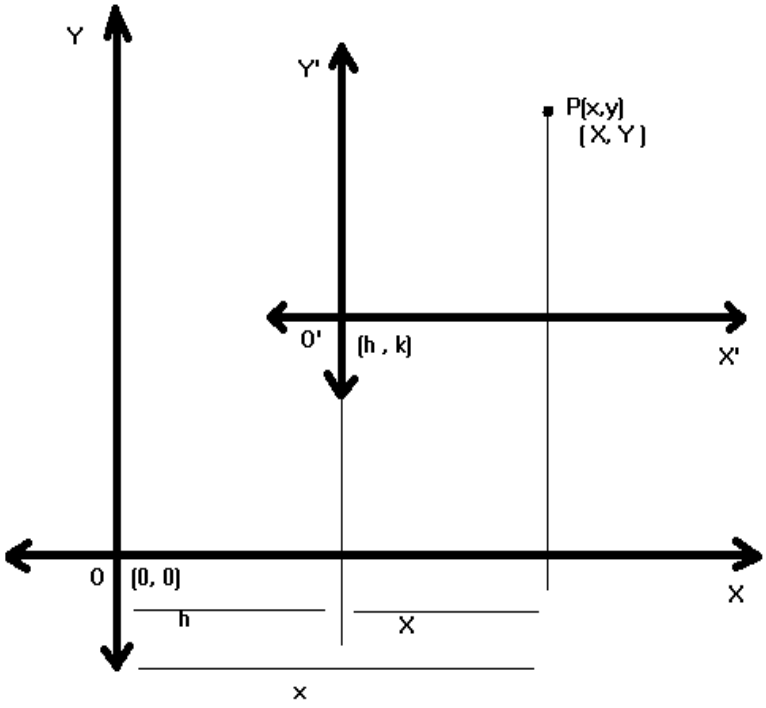
Chapter 11. STRAIGHT LINES

General direction for the students :-Whatever be the notes provided , everything must be copied in the Maths Copy and then do the Home work in the same Copy.

SHIFTING OF ORIGIN

Here ORIGIN (0, 0) is shifted to some other point (h , k) without changing the direction of the axes. This known as TRANSALATION OF AXES. When we do this , How it will affect the coordinates of a point and the equation of a curve with respect to the new axes.

Let $P(x, y)$ be a point w-r-t original axes (OX and OY) and P (X , Y) is the new point w-r-t new axes (OX' **and** OY' **)**



$x = X + h$, $y = Y + k$

- The point (x , y) becomes (x-h , y-k).
- The equation f(x , y)=0 becomes f(X+h , Y+k)=0.
- Transalation of axes cannot affect magnitudes like distance between two points and area of a figure etc.

Exercise 11.2

6. Let the origin shifted to (h , k)

$\Rightarrow x = X + h$, $y = Y + k$

Transformed equation is

$(Y+k)^2+4(Y+k)+8(X+h)-2=0$

$\Rightarrow Y^2+Y(2k+4)+8X+k^2+4k+8h-2=0 \quad \Rrightarrow \quad Y^2+aX=0$

$\Rightarrow 2k+4=0 \quad , \quad k^2+4k+8h-2=0$

$\Rightarrow$ k=-2 , 8h=6

$\Rightarrow$ h=3/4

The required point (3/4 ,- 2)

HOME WORK: Exercise 11.2 question numbers 1,2,3,4,5.