Selection of Co-ordinate of a Point on a Straight line.

(1) If the equation of the straight line be $ax + by + c = 0$, in order to select a point on it, take the x co-ordinate according to your sweet will. Let $x = \lambda$; then $a\lambda + by + c = 0$ or $y = -\frac{a\lambda + c}{b}$;

$\therefore \left(\lambda, -\frac{a\lambda + c}{b}\right)$ is a point on the line for any real value of λ. If $\lambda = 0$ is taken then the point will be $\left(0, -\frac{c}{b}\right)$.

Similarly a suitable point can be taken as $\left(-\frac{c}{a}, 0\right)$.

(2) If the equation of the line be $x = c$ then a point on it can be taken as (c, λ) where λ has any real value.

In particular (c, 0) is a convenient point on it when $\lambda = 0$.

(3) If the equation of the line be $y = c$ then a point on it can be taken as (λ, c) where λ has any real value.

In particular (0, c) is a convenient point on it when $\lambda = 0$.