Transformation

If p (x,y) is any point

Reflection :

1) Reflection at X-axis

$$P(x,y) \xrightarrow{\text{Re}:X-axis} P'(x,-y)$$

2) Reflection at Y-axis

$$P(x,y) \xrightarrow{\text{Re}:Y-axis} P'(-x,y)$$

3) Reflection from line y = x

$$P(x,y) \xrightarrow{\text{Re}:y=x} P'(y,x)$$

4) Reflection from y = -x

$$P(x,y) \xrightarrow{\text{Re}:y=-x} P'(-y,-x)$$

5) Reflection at line x = a

$$P(x,y) \xrightarrow{\text{Re}:x=a} P'(2a-x,y)$$

6) Reflection at line y = b

$$P(x,y) \xrightarrow{\text{Re}:y=b} P'(x,2b-y)$$

Rotation :

7) Rotation from Origin O(0,0) to $+90^0$ (Counter Clockwise)

$$P(x,y) \xrightarrow{R_0:[0,+90^0]} P'(-y,x)$$

8) Rotation from Origin O(0,0) to -90^0 (Clockwise)

$$P(x,y) \xrightarrow{R_0:[0,-90^0]} P'(y,-x)$$

9) Rotation from Origin O(0,0) to $\pm 180^0$ (Clockwise or Counter Clockwise)

$$P(x,y) \xrightarrow{R_0:[0,\pm 180^0]} P'(-x,-y)$$

10) Rotation from Origin O(0,0) to $+270^0$ (Clockwise)

$$P(x,y) \xrightarrow{R_0:[0,+270^0]} P'(-y,x)$$

11) Rotation from Origin O(0,0) to -270^0 (Counter Clockwise)

$$P(x,y) \xrightarrow{R_0:[0,-270^0]} P'(y,-x)$$

12) Rotation from Origin O(0,0) to $\pm 360^0$ (Counter Clockwise or Clockwise)

$$P(x,y) \xrightarrow{R_0:[0,\pm 360^0]} P'(x,y)$$

Translation :

13) Translation at a vector or a point T = (a ,b) or $\begin{pmatrix} a \\ b \end{pmatrix}$ is

$$P(x,y) \xrightarrow{T\begin{pmatrix} a \\ b \end{pmatrix}} P'(x+a,y+b)$$

Enlargement :

14) Centre of Enlargement C(0,0) and Scale Factor K then,

$$P(x,y) \xrightarrow{E:[0,k]} P'(kx,ky)$$

15) Center of Enlargement C(a,b) and Scale Factor K then,

$$P(x,y) \xrightarrow{E:[(a,b),k]} P'[kx-(k-1)a, ky-(k-1)b]$$

Thank You!!!