## MATHS FORMULA SHEET

## COORDINATE GEOMETRY

## Reflection

* Co-ordinates of origin $=(0,0)$
* Co-ordinates of X -axis $=(\mathrm{x}, 0)$
* Co-ordinates of Y-axis $=(0, y)$
* Equation of $X$-axis is $y=0$
* Equation of $Y$-axis is $x=0$
* $M_{X}(\mathrm{x}, \mathrm{y})=(\mathrm{x},-\mathrm{y})$
* $M_{Y}(\mathrm{x}, \mathrm{y})=(-\mathrm{x}, \mathrm{y})$
* $M_{0}(\mathrm{x}, \mathrm{y})=(-\mathrm{x},-\mathrm{y})$


## Section and Midpoint Formula

* Section formula is $\left[\frac{\mathbf{m x}_{2}+\mathbf{n x}_{1}}{\mathbf{m}+\mathbf{n}}, \frac{\mathbf{m y}_{2}+\mathbf{n y}_{1}}{\mathbf{m}+\mathbf{n}}\right]$
* Midpoint formula is $\left(\frac{x_{1}+x_{2}}{2}, \frac{y_{1}+y_{2}}{2}\right)$
* 
* Centroid of a triangle is divides each median in the ratio 2:1


## Equation of a line

* $m=\tan \Theta$
* $m=\Delta y / \Delta x=\left(y_{2}-y_{1}\right) /\left(x_{2}-x_{1}\right)$
* For parallel lines having slopes $m_{1}$ and $m_{2}, m_{1}=m_{2}$
* For perpendicular lines slopes $m_{1}$ and $m_{2}, m_{1}^{*} m_{2}=-1$
* For three collinear points $A, B$ and $C$, slope of $A B=$ slope of $B C$
* Slope-intercept form $\rightarrow y=m x+c$
* Point-slope form $\rightarrow\left(y-y_{1}\right)=m\left(x-x_{1}\right)$
* Two- point form $\left(y-y_{1}\right)=m\left(x-x_{1}\right)$

