**y=2x-4**



**5x-2y=6**



**3x+4y-12=0**



**Formula**

Midpoint of a line segment $\left(\frac{x\_{1}+ x\_{2}}{2} , \frac{y\_{1}+ y\_{2}}{2}\right)$

Equation of a line $y-y\_{1}=m(x-x\_{1})$

Slope of a line $y=mx+c$

Slope of a line given points on line $m=\frac{y\_{2}- y\_{1}}{x\_{2}- x\_{1}}$

Length of line segment or distance between 2 points $\sqrt{(x\_{2}-x\_{1})^{2}+(y\_{2}-y\_{1})^{2}}$

Parallel lines have the same slope $m\_{1}=m\_{2}$

Perpendicular lines slopes multiply to give -1 $m\_{1}.m\_{2}=-1$

**Exercises**

Find the Mid-point, Slope, Length of line segment and Equation of the lines for the following points

* $\left(-1, 1\right)$ and $\left(3, 4\right)$
* $\left(1, 2\right)$ and $\left(-2, 6\right)$

**Perpendicular Lines**

