

Formulas	
Straight Line	$y=mx+c$
Equation of parallel line OR Point of intersection	$y-y^1=m(x-x^1)$
Midpoint	$(\frac{x^1+x^2}{2}, \frac{y^1+y^2}{2})$
Distance Formula	$\sqrt{(x^2-x^1)^2+(y^2-y^1)^2}$
Gradient of parallel line	$m^1=m^2$
Gradient of perpendicular line	$m^1m^2=-1$ OR $m^2=-1/m^1$ & $-m^2=1/m^1$
Gradient	$m=\text{rise/run}$ OR $m=\frac{y^2-y^1}{x^2-x^1}$

Solving Stuff	
Finding a rule for a graph	For: $(x^1, y^1)$ & $(x^2, y^2)$ ⚡ Find gradient ⚡ Sub into $y-y^1=m(x-x^1)$
Finding equation of parallel line	⚡ Arrange into $y=mx+c$ ⚡ Find values of $x, y, m$ ⚡ Sub into $y-y^1=m(x-x^1)$ ⚡ Solve
Finding equation of perpendicular line	⚡ Find negative reciprocal of $m$ ⚡ Substitute $(x, y)$ into $y=mx+c$ ⚡ Solve for $c$
Finding point of intersection	⚡ Arrange one of the lines into $y=mx+c$ or $x=$ ⚡ Sub this into the other line ⚡ Solve for other coordinate
Shading Half Planes	>above <below
Horizontal Line	$y=b$
Vertical Line	$x=a$
Forming Simultaneous Equations	⚡ Define unknowns using pronumerals. ⚡ Form two equations from the information in the problem. ⚡ Solve simultaneously. ⚡ Answer the question in words.

Solving Stuff (cont)	
Solving Simultaneous	Solve two equations in two pronumerals using: ⚡ substitution when one pronumeral is the subject; e.g. $y = x + 4$ . ⚡ elimination when adding or subtracting multiples of equations eliminates one variable.
If asking for 'through $(x, y)$ perpendicular to $x=a$ , answer $y=b$ e.g perp. tp $x=7$ through $(0, 3) = y=3$	



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Published 17th July, 2016.  
 Last updated 17th July, 2016.  
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