Worked example	Your turn
Determine the point of intersection of the lines with equations $y = 2x$ and $x + 3y = 5$	Determine the point of intersection of the lines with equations $y = 3x$ and $x + 2y = 4$ $$\left(\frac{4}{7}, \frac{12}{7}\right)$$

Worked example	Your turn
A straight line passes through $(0, 4)$ and has gradient -3. It intersects the line with equation $2x - 7y - 6 = 0$ at the point P. Find the coordinates of P	A straight line passes through $(0, 3)$ and has gradient -4. It intersects the line with equation $7x - 6y + 2 = 0$ at the point P. Find the coordinates of P $$\left(\frac{16}{31}, \frac{29}{31} \right)$$

Worked example	Your turn
$y = 2x - 5$	$y = 3x - 4$
Gradient:	Gradient: 3
y-intercept:	y-intercept: -4
x-intercept:	x-intercept: $\dfrac{4}{3}$
Sketch:	Sketch:
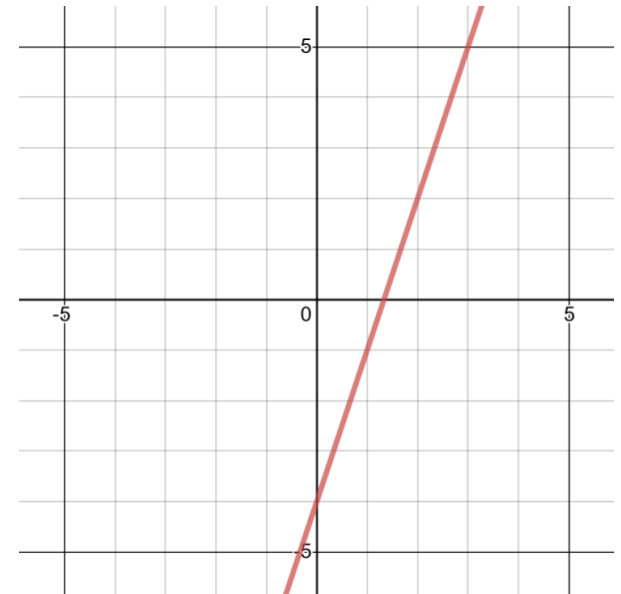
Graph used with permission from DESMOS: https://www.desmos.com/

Worked example	Your turn
$y = -2x + 6$	$y = -3x + 6$
Gradient:	Gradient: -3
y-intercept:	y-intercept: 6
x-intercept:	x-intercept: 2
Sketch:	Sketch:
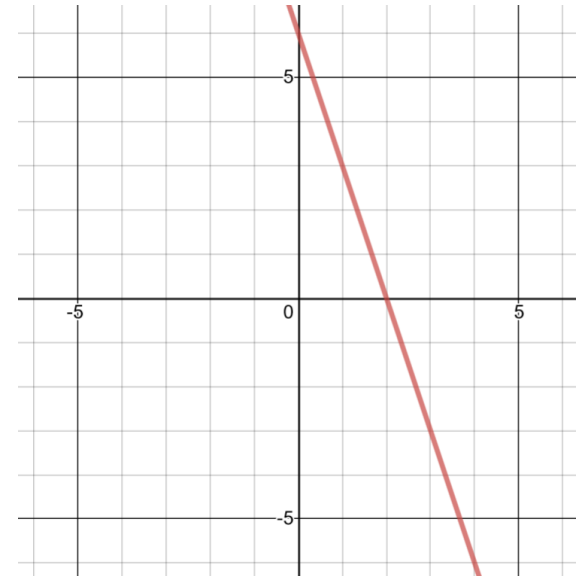
Worked example	Your turn
$2x + 3y = 6$	$3x + 2y = 6$
Gradient:	Gradient: $-\dfrac{3}{2}$
y-intercept:	y-intercept: 3
x-intercept:	x-intercept: 2
Sketch:	Sketch:
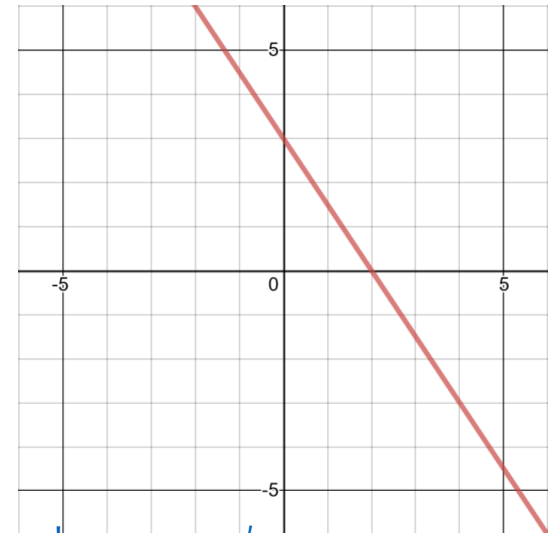
Worked example

Find where the line intercepts the axes:

Line	x-intercept	y-intercept
$y = 2x + 3$		
$y = 3x + 2$		
$y = 3x - 2$		
$y = 2x - 3$		
$y = 3 - 2x$		
$y = 2 - 3x$		
$2x + 3y = 6$		
$3x + 2y = 6$		
$y = ax + b$		

Your turn

Find where the line intercepts the axes:

Line	x-intercept	y-intercept
$y = 4x + 5$	$-\dfrac{5}{4}$	5
$y = 5x + 4$	$-\dfrac{4}{5}$	4
$y = 5x - 4$	$\dfrac{4}{5}$	-4
$y = 4x - 5$	$\dfrac{5}{4}$	-5
$y = 5 - 4x$	$\dfrac{5}{4}$	5
$y = 4 - 5x$	$\dfrac{4}{5}$	4
$4x + 5y = 20$	5	4
$5x + 4y = 20$	4	5
$ax + by = c$	$\dfrac{c}{a}$	$\dfrac{c}{b}$

Worked example	Your turn
The lines $y = 2x - 7$ and $3x + 2y - 21 = 0$ intersect at the point A. The point B has coordinates $(2, -8)$. Find the equation of the line that passes through the points A and B. Write your answer in the form $ax + by + c = 0$, where a, b and c are integers.	The lines $y = 4x - 7$ and $2x + 3y - 21 = 0$ intersect at the point A. The point B has coordinates $(-2, 8)$. Find the equation of the line that passes through the points A and B. Write your answer in the form $ax + by + c = 0$, where a, b and c are integers. $3x + 5y - 34 = 0$