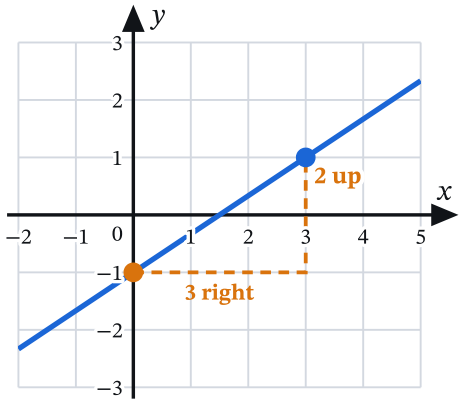
Names (pair) _____ Date _____

From Equation to Graph

Example



Let us draw $y = \frac{2}{3}x - 1$.

1. y-intercept: the point $(0, -1)$.

2. Slope triangle: $m = \frac{2}{3}$, so from that point 3 right and 2 up: $(3, 1)$.

3. Draw the line through the two points.

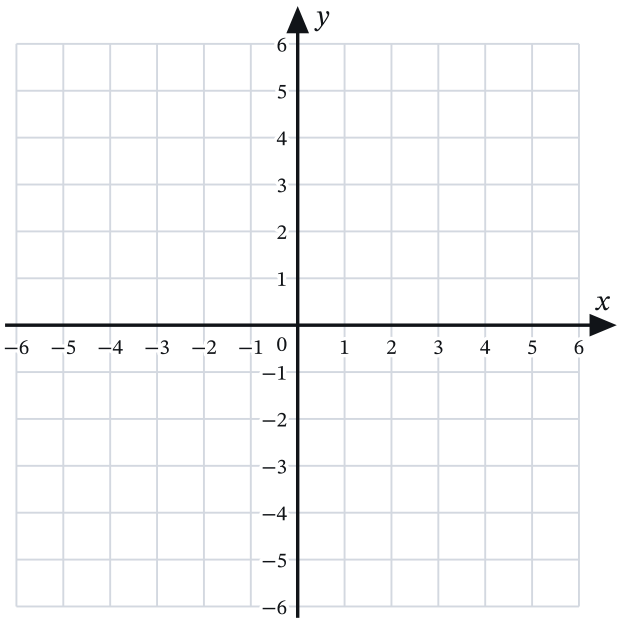
Check with a table: $x = 3$ gives $y = 2 - 1 = 1$ ✓

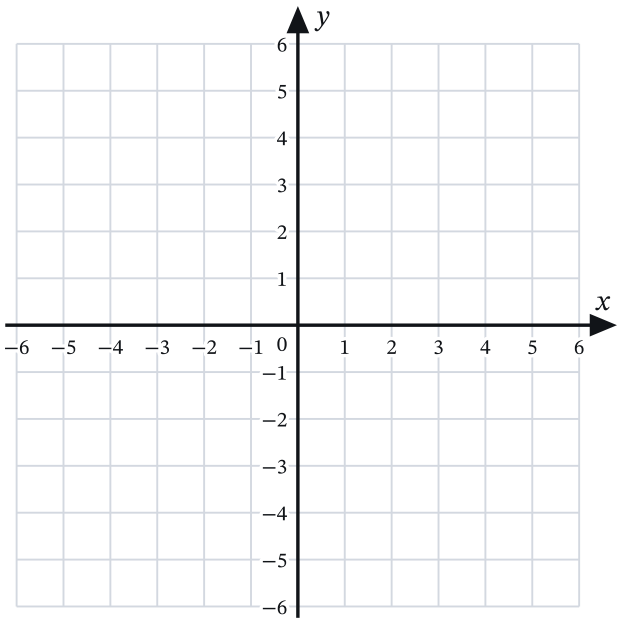
Remember

A line is fixed by two points. Quickest: the point $(0, b)$, then the slope triangle $m = \frac{rise}{run}$.

The **x-intercept** is the solution of $mx + b = 0$.

1 IN PAIRS Draw the lines: on the left $y = 2x - 3$ and $y = -x + 4$, on the right $y = \frac{1}{2}x + 1$ and $y = -\frac{3}{4}x + 2$.





Names (pair) _____ Date _____

2 ON YOUR OWN Work out the x-intercepts of the lines in task 1 and check them on the graphs.

Function	equation	x-intercept	on the graph
$y = 2x - 3$		$x =$	☐
$y = -x + 4$		$x =$	☐
$y = \frac{1}{2}x + 1$		$x =$	☐
$y = -\frac{3}{4}x + 2$		$x =$	☐

3 ON YOUR OWN Does the point lie on the graph of $y = -2x + 1$? Substitute and circle.

$(-1, 3)$ ____ **yes** / **no**

$(2, -2)$ ____ **yes** / **no**

$(0, 1)$ ____ **yes** / **no**

$(\frac{1}{2}, 0)$ ____ **yes** / **no**

4 IN PAIRS Write the equation of the line through $(0, 2)$ that goes down 3 when x goes up 1. Draw it on the left axes in task 1.

$y =$ ____

The Line Explorer app · otooly.com/line-explorer

Guess the line, Equation → graph: drag the points until the line is right.

The Geoboard app · otooly.com/geoboard

Functions board, task Equation → band: stretch a band along the given line.

★ ON YOUR OWN **Exit card.** The x-intercept of $y = 4x - 6$ is $x =$ ☐