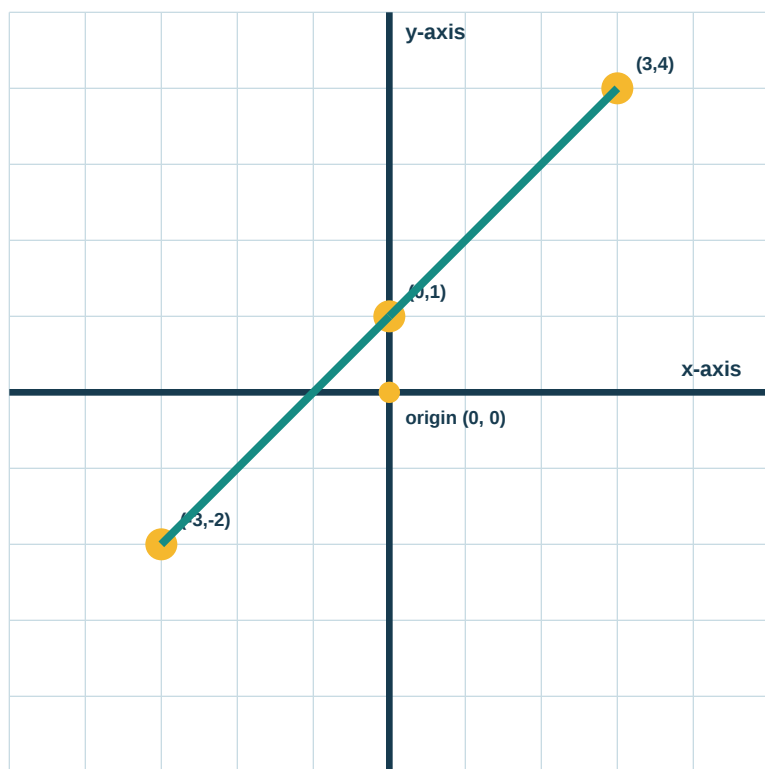


Linear Equation Forms

A linear equation makes a straight line with a constant slope.



What makes it linear?

Its graph is a straight line. The rate of change stays the same between every pair of points.

Find the slope first

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Use this formula when two points are given. The result is m , the slope.

Three Ways to Write the Same Kind of Line

Slope-intercept

$$y = mx + b$$

m is slope; b is the y -intercept.

Example: $y = 2x + 3$

Point-slope

$$y - y_1 = m(x - x_1)$$

First find m with $(y_2 - y_1)/(x_2 - x_1)$. Then use one point.

Example: $y - 4 = 2(x - 1)$

Standard

$$Ax + By = C$$

Use $x = 0$ or $y = 0$ to find where the line crosses each axis.

Example: $2x + y = 6$

Rewrite $2x + y = 6$ so y is alone

Subtract $2x$ from both sides: $2x + y - 2x = 6 - 2x$. The $2x$ terms cancel on the left. Result: $y = -2x + 6$.