# Algictionary

COLLEGE ALGEBRA DICTIONARY

| *symbol* | Definition |
|---|---|
| | *example* |

## Numbers

| | |
|---|---|
| $\mathbb{N}$ | natural or counting numbers |
| | 1, 2, 3, 4… |
| $\mathbb{Z}$ | integers |
| | …-2, -1, 0, 1, 2, 3... |
| $\mathbb{Q}$ | rational numbers, any $\frac{integer}{another\ integer\ (not\ equal\ to\ zero)}$ |
| | 11 , 37 , –225 … |
| $\mathbb{R}$ | real numbers, any number on a number line |
| | $1, , \frac{3}{7} , \pi , \sqrt{2}…$ |

## Basics

| | |
|---|---|
| [ ] | closed brackets; include endpoints |
| | [0, 1]: all points from 0 to 1, including 0 and 1 |
| ( ) | open parenthesis; exclude endpoints<br>*can also indicate a grouping of an operation |
| | (0, 1): all points from 0 to 1, not including 0 or 1<br>grouping: (2 + 3) |
| $\in$ | member of |
| | $3 \in \mathbb{N}$ |
| $\infty$ | Infinity |

## Equations

| | |
|---|---|
| $solve$ | find all numbers satisfying the condition;<br>sometimes worded *solutions to*, *find values of*, *etc.* |
| | solve x + 2 = 3 is asking for a number x = 1 |
| $f(x)$ | a function with input x<br>sometimes written as *g(x), h(x) etc.* |
| | f(x) = 3x +2 |

| | |
|---|---|
| $\sqrt{a}$ | what positive number times itself is a?<br>*alternatively written as $a^{1/2}$; note $\sqrt{0} = 0$* |
| | $\sqrt{4} = 2$ |

## Polynomials

| | |
|---|---|
| $polynomial$ | powers of x times a number summed together |
| | $3x^5 + 5x^2 + 5$ |
| $rational\ function$ | polynomial divided by a polynomial (no division by zero) |
| | $(3x^5 + 5x^2 + 5) / (3x + 5)$ |

## Exponentials

| | |
|---|---|
| $e$ | a number approximately 2.718 |
| | $e^1 \approx 2.718\ldots$ |
| $log_a b$ | asks the question: a to what power is b? |
| | $\log_2 8 = 3$ |
| $ln$ | log with base e |
| | $\ln e = 1$ |