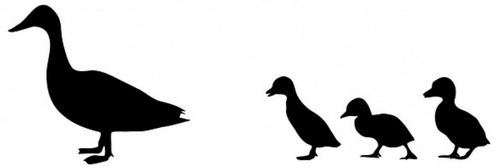
Examples



Equations have the “=” sign.
This sign means that the quantities on the left and right have the same value.

$$3+8=11$$

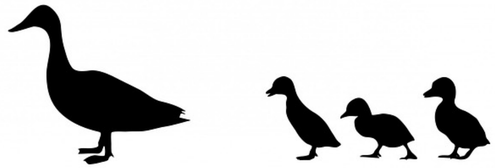
$$8=3+5$$

$$2+6=3+5$$

$$x+7=9$$

$$2x^2-4x=7$$

Examples



An **expression** is anything you could find on one side of an equation

x

$2x+5$

πr^2

$2\pi r$

$2x$

$y-7$

mc^2

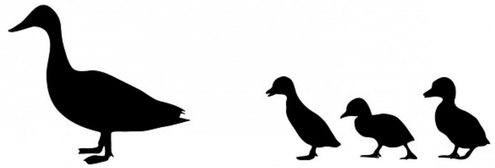
$3a+2b$

$\sqrt{7}$

$3+9-4$

$\frac{a}{b}$

Examples



Inequalities have one of the following signs: ≠, <, >, ≤, or ≥

$$7 \neq 6$$

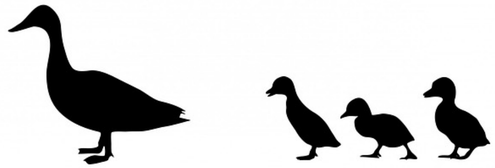
$$3.5 > 3$$

$$x < 4$$

$$p \leq 9$$

$$y + 2 \geq 7$$

Examples



Formulas are equations which help you calculate one **variable** given one or more others

$$A = \pi r^2$$

$$C = 2\pi r$$

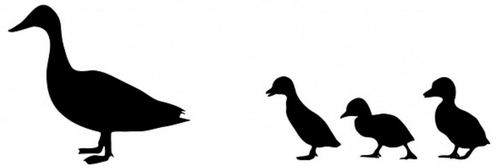
$$C = \tfrac{5}{9}\left(F - 32\right)$$

$$E = mc^2$$

$$F = ma$$

$$V = \tfrac{4}{3}\pi r^3$$

Examples



Identities have the "≡" sign.
This sign means that the quantities are the same, regardless of the value of the variables.

$$x + x + x \equiv 3x$$

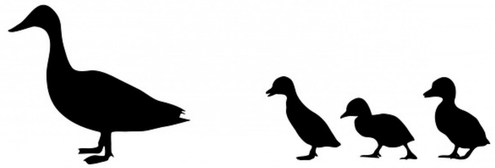
$$2 \times m \times n \equiv 2mn$$

$$y(y+1) \equiv y^2 + y$$

Compare the above with this **equation**, which is only true when $x = 4$:

$$x + 3 = 7$$

Examples

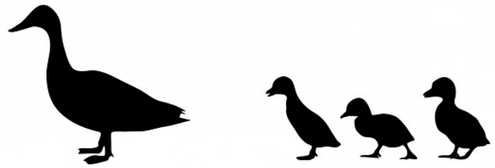


Terms are either (a) numbers, (b) variables or (c) products of numbers and variables - and they are separated by a + or -.

$3a+2b$	$3a$ and $2b$ are terms.
$4x-2y+3z$	$4x$, $2y$ and $2b$ are terms*
$3(x+7)$	x and 7 are terms
$2m+m-n+4m$	$2m$, m, n, and $4m$ are terms*

*Watch video for clarification about negative terms.

Examples



Factors of an algebraic expression divide exactly into it:

The factors of $4x$ are $1, 4x, 2, 2x, 4,$ and x.

The factors of $3x+6$ are $1, (3x+6), 3,$ and $\left(x+2\right)$.

The factors of $4x+12$ are $1, (4x+12), 4, \left(x+3\right),$

$2,$ and $\left(2x+6\right)$.

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$7x + 4y = 12$$

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

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$$7x + 4y = 12$$

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Equation Inequality Identity

Expression Term Factor Formula

$$7x + 4y = 12$$

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$x \geq 9$$

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$2a - 3b = 4a + b$$

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$2a - 3b = 4a + b$$

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Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$2a - 3b = 4a + b$$

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$3(x+1) \equiv 3x+3$$

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$3\left(x+1\right) \equiv 3x+3$$

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$4 + 7 \neq 10$$

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$x^2 + 4x - 9 < 0$$

Diagnostic

Which word *best* describes the mathematical object highlighted?

Equation Inequality Identity

Expression Term Factor Formula

$$x^2 + 4x - 9 < 0$$