Write Mathematical Expressions for Verbal Expressions

$$(a+b)^2 = a^2 + 2ab + b^2$$
$$(a-b)^2 = a^2 - 2ab + b^2$$
$$(a+b)^3 = a^3 + 3a$$
$$(a-b)^3 = a^3 - 3a$$
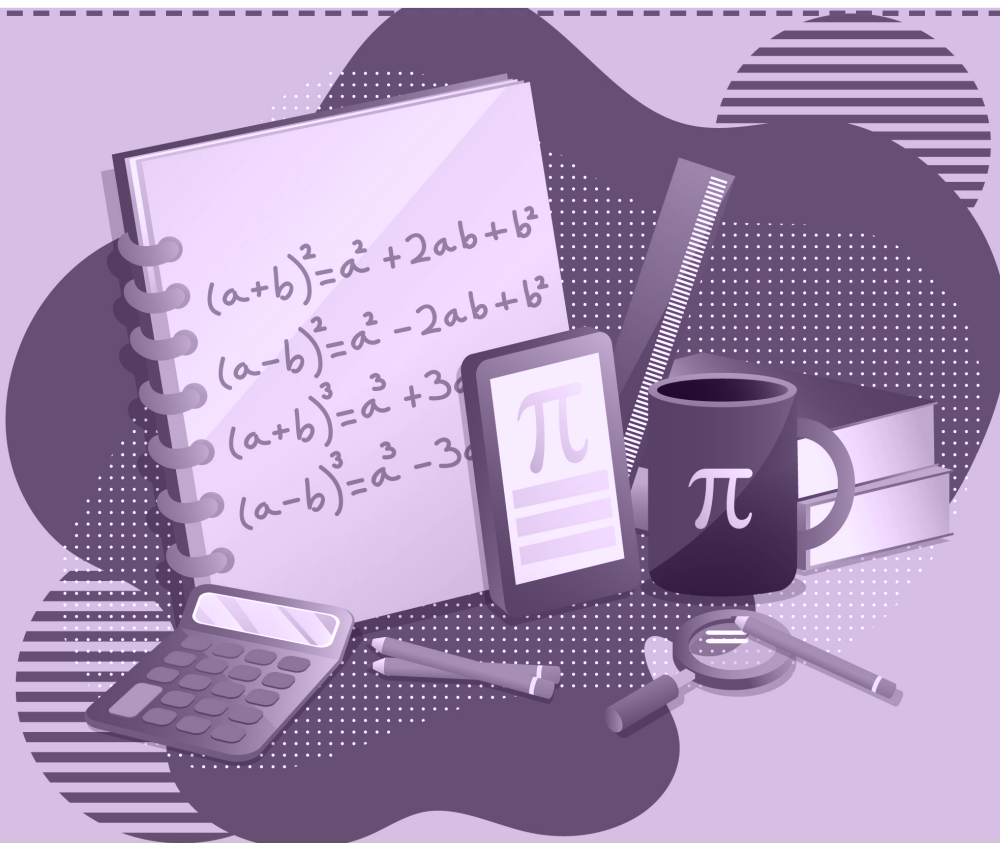
The Language of Algebra

Vocabulary A-Z
Let us learn some vocabulary

variables
are symbols used to represent unspecified numbers or values.

> In the algebraic expression **4s**, the letter **s** is called a variable.

algebraic expression
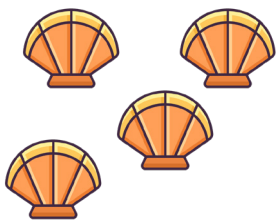consists of one or more numbers and variables along with one or more arithmetic operations.

5x	3x − 7
m x 5n	3ab ÷ 5cd

factors
In each expression, the quantities being multiplied are called factors.

product
In each expression, the result of the multiplied factors is called the product.

3 x 1   **=3**

The **factors** are **3** and **1.**   The **product** is **3**

exponent

in the expression x^n the variable n is called the exponent.

base

in the expression x^n the variable x is called the base.

power

The amount an expression like x^n is raised is called a power.

Base 8^2 Exponent (or index, or power)

Remember to read your instructions!

Write an expression
Your answer will be
an expression

Example
14 + 1
26 ÷ 2

Evaluate an expression
Your answer will be a
value

Example
15
13

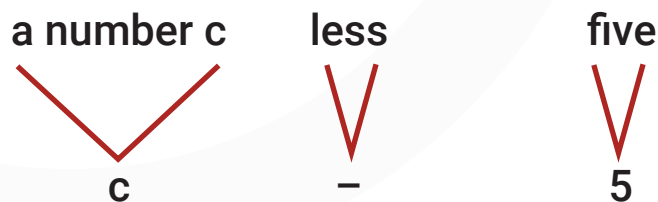Sometimes it will ask you to write and then evaluate so you must do both!

Write Algebraic Expression

Write an algebraic expression for 5 less than a number c.

The words less than suggest subtraction.

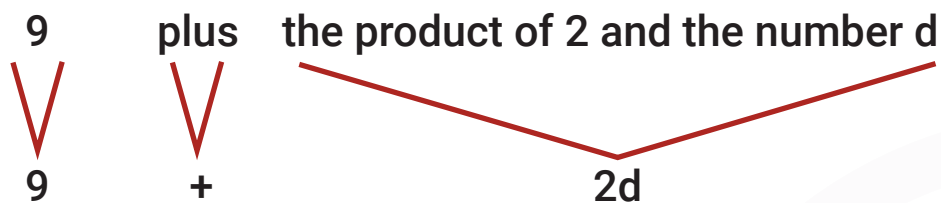| a number c	less	five
c	−	5

ANSWER — **Thus, the algebraic expression is c − 5.**

Write an algebraic expression for 9 plus the product of 2 and the number d.
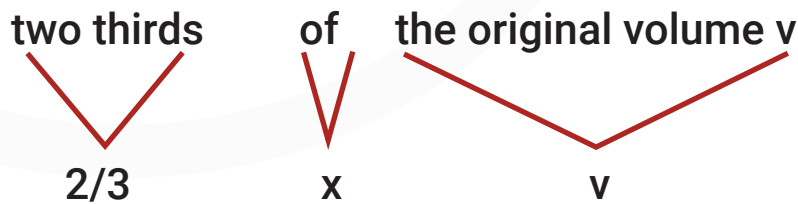
Plus implies add, and product implies multiply.

9	plus	the product of 2 and the number d
9	+	2d

ANSWER — **the expression can be written as 9 + 2d.**

Write an algebraic expression for two thirds of the original volume v.

The word of implies multiply.

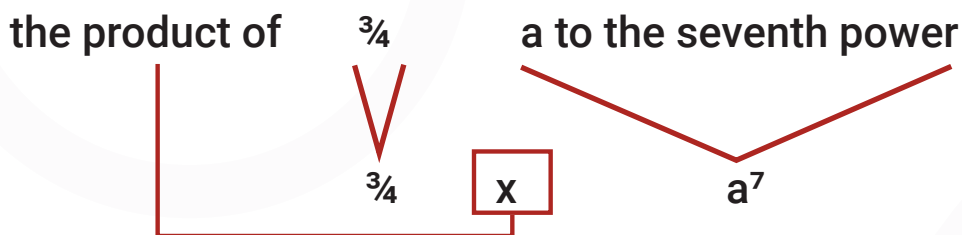two thirds   of   the original volume v

2/3   x   v

ANSWER   The expression can be written as $\dfrac{2}{3}$ v.

Write an algebraic expression for the product of $\dfrac{3}{4}$ and a to the seventh power.

The word product implies multiplication.

the product of   ¾   a to the seventh power

¾   x a^7

ANSWER   The expression can be written as $\dfrac{3}{4}$ a^7.

Write Algebraic Expression

Write an algebraic expression for nine more than a number h.

A. 9 − h
B. 9h
C. 9 + h
D. h − 9

Write an algebraic expression for the difference of 6 and 4 times a number x.

A. 6 − 4x
B. (6 − 4)x
C. 6 + 4x
D. 6x − 4

Write an algebraic expression for one half the size of the original perimeter p.

A. 2p

B. $\frac{1}{2}p$

C. p²

D. p¹⁄₂

Write an algebraic expression for the product of 6 and x to the fifth power.

A. $6x^5$
B. $30x$
C. $6(5x)$
D. $5x^6$