

Lesson 2 – Polynomials.
Simplifying Algebraic Expressions

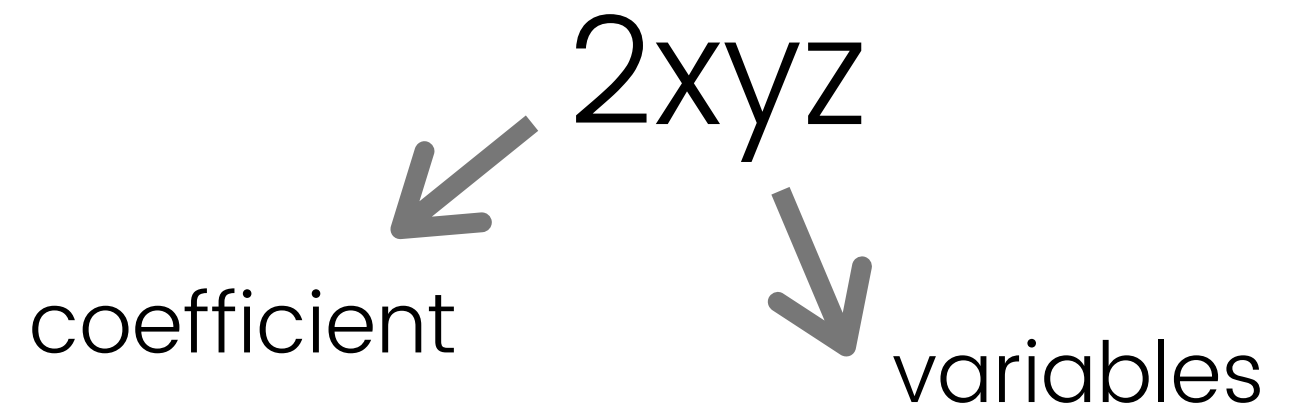
Grade 9

WWW.INTOMATH.ORG





a product of a number and a variable
is called a **MONOMIAL** or a **TERM**



when multiplying monomials, multiply their
coefficients and corresponding variables separately

$$2mn \times 3m^2s = 6m^{1+2}ns = \boxed{6m^3ns}$$

an algebraic sum of two monomials
is called a **BINOMIAL**


$$2x^2 + 3y$$

an algebraic sum of three monomials
is called a **TRINOMIAL**

$$5x^2 + 4x - 13$$

an algebraic sum of four or more
monomials is called a **POLYNOMIAL**

$$3mn^2 + 4m^2 - 13m + n$$




When two monomials only differ by their coefficients, such monomials are called **LIKE TERMS**

$$8x^2y \text{ and } -10x^2y$$

$$8xy^2 \text{ and } -10x^2y$$

these are **NOT LIKE TERMS**
even though the variables are the same, their exponents (degrees) are different

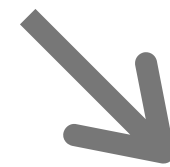


COLLECTING LIKE TERMS

in order to collect LIKE TERMS, add their coefficients and multiply the result by the common variable expression

$$\underline{-2mn^2} + 4p^2 - \underline{13mn^2}$$

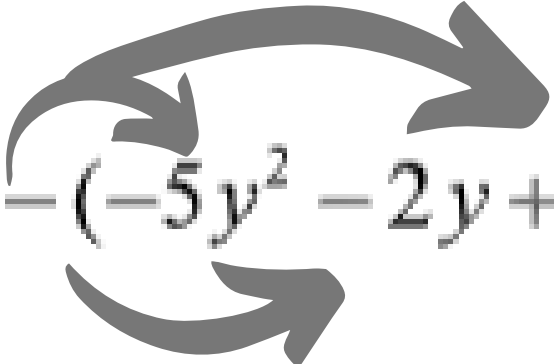
$$-15mn^2 + 4p^2$$



simplest form of the expression
no more like terms

ADDING and SUBTRACTING POLYNOMIALS

$$(3y^2 + 5y - 3) + (-5y^2 - 2y + 7) = 3y^2 + 5y - 3 - 5y^2 - 2y + 7 = -2y^2 + 3y + 4.$$


$$(3y^2 + 5y - 3) - (-5y^2 - 2y + 7) = 3y^2 + 5y - 3 + 5y^2 + 2y - 7 = 8y^2 + 7y - 10.$$



MOVE ON TO GRADE 9 LESSON 3

**GREAT
WORK!**