

Strand 2 WWK (page 43 & 44)

x, y, a, b

variable - algebra uses letters, such as x and y , to represent numbers.

algebraic expression - a combination of variables and numbers using operations of addition, subtraction, multiplication, or division, as well as powers or roots. $3x + 4y - 7$

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TOC page 45 Expressions & Formulas

Definitions
to find the value of the expression for a given value of the variable

Characteristics
1) plug in value for variable
2) order of operation (PEMDAS)

Evaluating an expression

Example
 $7x + 5$ for $x = 10$
 $7(10) + 5$
 $70 + 5$
 75

$-2x^2 + 5xy - y^2$ for $x = 44$ $y = 2$
 $-2(44)^2 + 5(44)(2) - (2)^2$
 $-2(1936) + 5(44)(2) - 4$
 $-3872 + 440 - 4$
 -3436

Non-example.
Solve for x .
 $-5 + 5x = 0$
 $+5 \quad +5$
 $\frac{5x = 5}{5 \quad 5}$
 $x = 1$

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Simplify.

Combine like terms.

① $8x - 10x$
 $-2x$

② $3x^2 - 7x^2$
 $-4x^2$

③ $4x + 7y + 11 - 2x - 9y - 3$
 $(2x - 2y + 8)$

Algebraic Expression (Distributive Property)

④ $5(3x - 7) - 6x$
 $15x - 35 - 6x$
 $(9x - 35)$

⑤ $2x - (3x - 4y + 6)$
 $2x - 3x + 4y - 6$
 $(-x + 4y - 6)$

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Examples (page 37)

Example 1: Evaluate

a) $6x + 9$ for $x=12$ b) $x^2 + 4x - 7$ for

$6(12) + 9$

$72 + 9$
 (81)

$x = -5$

$(-5)^2 + 4(-5) - 7$
 $25 - 20 - 7$
 $5 - 7 = -2$

c) $-3x^2 + 4xy - y^2$ for $x = 5$ and $y = 6$

$-3(5)^2 + 4(5)(6) - (6)^2$

$-3(25) + 4(5)(6) - 36$

$-75 + 120 - 36$

$45 - 36$

(9)

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Example 2: Simplify

a) $4y + 15y$

$$\boxed{19y}$$

b) $9x + 6y + 15 - 3x - 20y - 16$

$$\boxed{6x + 14y - 1}$$

c) $7(2x - 3) - 11x$

$$\frac{14x - 21 - 11x}{\boxed{3x - 21}}$$

d) $7x - (15x + 2y - 11)$

$$\frac{7x - 15x - 2y + 11}{\boxed{-8x - 2y + 11}}$$

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ISBN p. 46
p. 277
#3-75
mult. of 3

Expression & formula
Practice (6)

Sep 26-9:46 AM

WNK (page 35)

terms - parts of an algebraic expression separated by addition or subtraction $7x - 9y - 3$ 3 terms

coefficient - the numerical part of the term $7x$

constant term - the term that is just numerical (no variable)

like terms - terms that have the same variables with the same exponents

$$3x \text{ \& } 7x \quad 4y \text{ \& } 9y$$
$$5x^2 \text{ \& } -3x^2$$

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