

### 3.1 Simplifying Algebraic/Variable Expressions p.82

#### Part 1: Identifying Parts of an expression

What is an expression?

a math sentence that contains variables, numbers and operations (+, -, x, ÷)

Algebraic expressions DO NOT have equal sign (only equations do).

Examples of algebraic expressions are:  $6+3x$ ;  $7h$ ;  $8-n$ ;  $z$ ;  $2f+g+5$

$$7a - 6 + 3b - 4a + 2$$

**TERM:** a number, a variable, or product/quotient of a number and a variable; they are separated by plus or minus signs.

The expression above has 5 terms.

**CONSTANT:** a term without a variable (a number by itself)

The constants from above are  $-6, 2$ .

[variables vary]

**COEFFICIENT:** a number multiplying a variable; ALWAYS before the variable; if a variable doesn't have a coefficient, then it is 1.

The coefficients from above are  $7, 3, -4$ .  $m$   $2m$

**LIKE TERMS:** a) terms that contain the same variable, raised to the same power or  
b) terms that contain NO variable at all (constants)

The like terms from above are  $7a, -4a$  |  $-6, 2$ .

(circle terms) Expression	# w/ variable Coefficients	① have same variable ② have no variable Like Terms	# alone Constants
$8 + 3b - 5$	3	8, -5	8, -5
$8c + 3b - 2 + 4c + ab$	8, 3, 4, 2	$8c, 4c; 3b, ab$	-2
$8x - x + 4$	8, -1	$8x, -x$	4
12	none	none	12
j	1	none	none
$-4g - f$	-4, -1	none	none
$-12b - 4 + 3c$	-12, 3	none	-4
$-9d - d + 8 + 3d - 7$	-9, -1, 3	$-9d, d, 3d$ 8, -7	8, -7
$j - 3 - j^2 + 2 + k$	1, -1, 1	-3, 2	-3, 2
$5x^2 - x + 2x^2 - 4$	5, -1, 2	$5x^2, 2x^2$	-4