

# TEST REVIEW

UNIT 1A

## Coordinate Algebra Review: Interpreting Structure in Expressions

Name: \_\_\_\_\_

Date: \_\_\_\_\_

MGSE9-12.A.SSE.1 Interpret expressions that represent a quantity in terms of its context.  
MGSE9-12.A.SSE.1a Interpret parts of an expression, such as terms, factors, and coefficients.

Combine Like Terms.

1.  $3x - 2x + 3 + 7x$

$8x + 3$

2.  $2a + 4b - 6c + 2c + a - 4b$

$3a - 4c$

For problems 3 and 4, identify the terms, coefficients, constants, and factors of the given expressions.

3.  $29x + 3y - 5$

Terms  $29x, 3y, -5$

Factors SKIP

Coefficients  $29, 3$

Constants  $-5$

4.  $4px + 108$

Terms  $4px, 108$

Factors SKIP

Coefficients  $4$

Constants  $108$

Write an algebraic expression to describe each situation. Identify the terms, coefficients, constants, and factors.

5. Five minus twice the square of a number.

standard form

Algebraic Expression:  $5 - 2x^2$  (or  $-2x^2 + 5$ ) Terms:  $5, -2x^2$

Factors: SKIP

Coefficients:  $-2$

Constants:  $5$

6. You and your friends go to a concert. Each ticket costs n amount of dollars. You buy six tickets and the tax comes to \$12.54. Write an expression to represent the total price of the concert tickets including tax.

Algebraic Expression:  $6x + 12.54$

Terms:  $6x, 12.54$

Factors: SKIP

Coefficients:  $6$

Constants:  $12.54$

7. Three times the difference of a number and two. (Hint: simplify!)

$3(x-2) = 3x-6$

Algebraic Expression:  $3(x-2)$  OR  $3x-6$

Terms:  $3x, -6$

Factors: SKIP

Coefficients:  $3$

Constants:  $-6$

Review - Polynomial Operations

Name \_\_\_\_\_  
Date \_\_\_\_\_

1. How many terms does the following polynomial have?  $-9x^4 - 9x^3 + 7x^2 + 3x + 8$

5

2. Classify the following by the number of terms:

a.  $-4x$  1 term

monomial

b.  $8p^2q + 3p$  2 terms

binomial

Simplify each expression.

3.  $(7x^4 - 10x^2 + 8x - 5) + (8x^4 + 7x^2 + 2)$

$15x^4 - 3x^2 + 8x - 3$

4.  $(-8x^5 + 10x^3 - 7x^2 + 5) - (6x^4 + 10x^3 + 2x^2)$

$-8x^5 + 10x^3 - 7x^2 + 5 - 6x^4 - 10x^3 - 2x^2$   
 $-8x^5 - 6x^4 - 9x^2 + 5$

5.  $4x(3x - 2) + 8x(2x^2 - 3x + 7)$

$(12x^2 - 8x) + (16x^3 - 24x^2 + 56x)$   
 $16x^3 - 12x^2 + 48x$

6.  $[2x^2(-3x^3 + x)] - [3x(4x^2 - 2x + 1)]$

$(6x^5 - 2x^3) - (12x^3 - 6x^2 + 3x)$   
 $6x^5 - 2x^3 - 12x^3 + 6x^2 - 3x$   
 $6x^5 - 14x^3 + 6x^2 - 3x$

7.  $(-8x + 5)(3x - 2)$

$-24x^2 + 16x + 15x - 10$   
 $-24x^2 + 31x - 10$

8.  $(6r + 8)(7r - 1)$

$42r^2 - 6r + 56r - 8$   
 $42r^2 + 50r - 8$

9.  $(9x - 7)^2 = (9x - 7)(9x - 7)$

$81x^2 - 63x - 63x + 49$   
 $81x^2 - 126x + 49$

10.  $-8x(9x - 4)$

$-72x^2 + 32x$

11.  $(6x - 7)(6x + 7)$

$36x^2 + 42x - 42x - 49$

12.  $(3x + 7)(6x^2 - 2x + 8)$

$18x^3 - 6x^2 + 24x + 42x^2 - 14x + 56$   
 $18x^3 + 36x^2 + 10x + 56$

13.  $(v^2 - 3v - 5)(2v^2 + v - 2)$

$2v^4 + v^3 - 2v^2 - 6v^3 - 3v^2 + 6v - 10v^2 - 5v + 10$   
 $2v^4 - 5v^3 - 15v^2 + v + 10$