

Name: Key  
Date: \_\_\_\_\_ Per: \_\_\_\_\_

## Polynomials Study Guide

Standards:

A 505-Add, subtract, and multiply polynomials

A 605-Solve quadratic equations

1. The expression  $-8x^3(7x^6 - 3x^5)$  is equivalent to (simplify):

$$-56x^9 + 24x^8$$

Skills Needed: Mult Polynomials

2.  $t^2 - 59t + 54 - 82t^2 + 60t$  is equivalent to (simplify):

$$-81t^2 + t + 54$$

Skills Needed: Add/Subt Polynomials

3. The expression  $(4x+3)(x-2)$  is equivalent to:

$$4x^2 - 5x - 6$$

Skills Needed: Mult Polynomials

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4. Which of the following is an equivalent simplified expression for

$$2(4x+7)-3(2x-4)$$

$$2x+26$$

Skills Needed: *Mult Polynomials*

5. What polynomial must be added to  $x^2 - 2x + 6$  so that the sum is  $3x^2 + 7x$ ?

$$2x^2 + 9x - 6$$

Skills Needed: *Add/subt Polynomials*

6. For all  $x$ ,  $(3x+7)^2 =$

$$9x^2 + 42x + 49$$

Skills Needed: *Mult Polynomials*

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7. What polynomial must be added to  $x^2 - 2x + 6$  so that the sum is  $3x^2 + 7x$ ?

$$2x^2 + 9x - 6$$

Skills Needed: Add/Subt Polynomials

8. The expression  $(3x - 4y^2)(3x + 4y^2)$  is equivalent to:

$$9x^2 - 16y^4$$

Skills Needed: Mult Polynomials

9.  $(a + 2b + 3c) - (4a + 6b - 5c)$  is equivalent to:

$$-3a - 4b + 8c$$

Skills Needed: Add/Subt Polynomials

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10. What is the factored form of the expression  $5x^2 - 13x - 6$ ?

$$(5x+2)(x-3)$$

Skills Needed: ~~Factor trinomial~~  
Quadratic

11. If  $2x^2 + 6x = 36$  what are the possible values of  $x$ ?

$$x=3, x=-6$$

Skills Needed: ~~Factor~~ Find solution to quadratic

12. What values of  $x$  are solutions for  $x^2 + 2x = 8$ ?

$$x=2, x=-4$$

Skills Needed: Find solution to quadratic.

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13. When  $(2x+4)^2$  is written in the format  $ax^2+bx+c$ , where  $a$ ,  $b$ , and  $c$  are integers, what is the value of  $a+b-c$  ?

4

Skills Needed: *Mult. Polynomials*

14. What is the sum of the 2 solutions of the equation  $x^2+5x-24=0$  ?

-5

Skills Needed: *Solve quadratic*

15. What is the product of the solutions of the expression  $x^2-5x-14=0$  ?

-14

Skills Needed: *Solve quadratic*

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16. Provide the roots of the equation:  $y^2 - 4y - 5 = 7$ .

$$y = -2$$
$$y = 6$$

Skills Needed: ~~Factor~~ Solve quadratic

**Skills Needed:**  
Add/Subtract Polynomials  
Multiply Polynomials  
Factor Quadratic  
Find Solution(s) to Quadratic