Name:_____ Date:_____

Review Ditto Common Core Algebra

1) An algebraic expression that contains three terms is called trinomial	2) Name the method for multiplying a binomial by a binomial tabular method	3) Arrange $5x^{20}+3x^{32}-x^{21}+x^2-6$ in standard form $3x^{32}-x^{21}+5x^{20}+x^2-6$
4) Any non-zero number raised to the zero power is always equal to one	5) What is the conjugate of $x-2$? $(x+2)$	6) What is the additive inverse of $7x-3y$? opposite signs $-7x+3y$

Addition Rule	Subtraction Rule
Combine like terms keep base & keep exponents	Drop the parenthesis distribute the negative combine like terms

7) Simplify $(6x^2+2y)+(-3x^2-5y)-8$ $3x-3y+1$	8) The sum of $8x^2-x+4$ and $x-5$ $8x^2-x+4+x-5$ $8x^2-1$
9) The sum of $3x^2+4x-2$ and x^2-5x+3 can be expressed as $4x^2-x+1$	10 Express the sum of x^2-3x+5 and $3x^2-2x-2$ as a trinomial. $4x^2-5x+3$
11) Simplify $5x^2-(-2x^2)$ $5x^2+2x^2$ $7x^2$	12) The sum of $3x^2+x+8$ and x^2-9 can be expressed as $4x^2+x-1$
13) When a^2+a-3 is subtracted from $3a^2-5$, the result is $3a^2-5-(a^2+a-3)$ $3a^2-5-a^2-a+3$ $2a^2-a-2$	14) When $3x^2-8x$ is subtracted from $2x^2+3x$, the difference is $2x^2+3x-(3x^2-8x)$ $2x^2+3x-3x^2+8x$ $-x^2+11x$
15) The expression $(2x^2+6x+5)-(6x^2+3x+5)$ is equivalent to $2x^2+6x+5-6x^2-3x-5$ $-4x^2+3x$	16) When $-2x^2+4x+2$ is subtracted from x^2+6x-4, the result is $x^2+6x-4-(-2x^2+4x+2)$ $x^2+6x-4+2x^2-4x-2$ $3x^2+2x-6$

Multiplication Rule # 1 Powers that have the same base:

Keep base ; add exponents

17) The expression $x \cdot x^3 \cdot x^5$ is equivalent to x^9

18) The expression $3^2 \cdot 3^3 \cdot 3^4$ is equivalent to 3^9

19) The expression $x^{-2} \cdot x^{-3} \cdot x^9$ is equivalent to x^4

Multiplication Rule # 2 Multiplying by a monomial

1) Distribute the monomial
2) multiply the coefficients
3) Keep base ; add exponents

20) The product of $4x^2y$ and $2xy^3$ to

$8x^3y^4$

21) What is the product of $2r^2 - 5$ and $3r$?

$3r(2r^2 - 5)$

$6r^3 - 15r$

22) What is the product of $-3x^2y$ and $(5xy^2 + xy)$?

$-3x^2y(5xy^2 + xy)$

$-15x^3y^3 - 3x^3y^2$

23) Simplify $-3x(2x^4 - 12x^2 + 7)$

$-6x^5 + 36x^3 - 21x$

24) Simplify $7 + 2(5x - 6)$

$7 + 10x - 12$

$10x - 5$

25) Simplify $-6x - 7(4 + 3x)$

$-6x - 28 - 21x$

$-27x - 28$

Multiplication Rule # 2 Multiplying by binomials

1) Distribute
2) Box method

26) $(x + 2)(x + 3)$

$x^2 + 3x + 2x + 6$

$x^2 + 5x + 6$

27) $(x + 4)(x - 2)$

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

$x^2 + 2x - 8$

28) $(m - 10)(m + 7)$

$m^2 + 7m - 10m - 70$

$m^2 - 3m - 70$

29) $(x - 3)(x - 5)$

$x^2 - 5x - 3x + 15$

$x^2 - 8x + 15$

30) $(3x^2+6x)+(x^2-7x+9)$

$3x^2+6x-x^2+7x-9$

$\boxed{2x^2+13x-9}$

31) $(x-6)^2$ twice

$(x-6)(x-6)$

$x^2-6x-6x+36$

$\boxed{x^2-12x+36}$

32) The expression $(a^2+b^2)^2$ is equivalent to

1) a^4+b^4
2) $a^4+a^2b^2+b^4$
3) $a^4+2a^2b^2+b^4$
4) $a^4+4a^2b^2+b^4$

$(a^2+b^2)(a^2+b^2)$

$a^4+a^2b^2+b^2a^2+b^4$

$a^4+2a^2b^2+b^4$

33) Multiply $(x-3)$ by its conjugate

$(x-3)(x+3)$

$x^2+3x-3x-9$

$\boxed{x^2-9}$

Power Rule

method I: raise coefficient to power, keep base, multiply exponents

method II: write out the term out and follow multiplication rules

34) $(x^5y^4)^3$ write out three times

$(x^5y^4)(x^5y^4)(x^5y^4)$

$\boxed{x^{15}y^{12}}$

35) $(2b^4)^3$ write out three times

$(2b^4)(2b^4)(2b^4)$

$\boxed{8b^{12}}$

36) $(10^3)^2$

$(10^3)(10^3)$

$\boxed{10^6}$

37) The expression $(6x^3y^6)^2$ is equivalent to

$(6x^3y^6)(6x^3y^6)$

$\boxed{36x^6y^{12}}$

38) The product of $(5ab)$ and $(-2a^2b)^3$ to

$(5ab)(-2a^2b)(-2a^2b)(-2a^2b)$

$-40a^7b^4$

39) Simplify $(x^3)^{14}$

multiply

$(x^3)^{14} = \boxed{x^{42}}$