FINAL REVIEW #2

Monomials and Polynomials

Like terms - expressions containing same Variables with the Same exponents

Examples: $3x$ and $2x$

$-7y^2$ and $-y^2$

Monomial - 1 term

Binomial - 2 terms

Trinomial - 3 terms

Degree of a polynomial - highest degree on any one monomial

Exponent Rules:

1. $x^a \cdot x^b = x^{a+b}$
2. $(x^a)^c = x^{ac}$
3. $x^a \div x^b = x^{a-b}$
4. $x^a \div x^a = 1$
5. $x^0 = 1$
6. $x^{-n} = \frac{1}{x^n}$

Examples:

$y^3 \cdot y^5 = y^8$

$(x^3)^4 = x^{12}$

$\frac{4^3}{4} = 4^2 = 16$

$z^2 \div z^2 = 1$

$5^0 = 1$

$t^{-2} = \frac{1}{t^2}$

***Combine Like Terms*:**

1. $3r^2 + 2r^2$

$5r^2$

2. $5bc - bc$

$4bc$

3. $8d^2 - (6d^2 - 4d)$

$8d^2 - 6d^2 + 4d$

$2d^2 + 4d$

4. $3(2a+b) - 4(4a-2b)$

$3(2a)+3(b)-4(4a)-4(-2b)$

$6a + 3b - 16a + 8b$

$-10a + 11b$

5. $(x^2 + 5x - 24) + (-x^2 - 4x + 9)$

$x^2 + 5x - 24 - x^2 - 4x + 9$

$x - 15$

Multiply Monomials

6. $(-8x^3)(-3x)(2x)$

$(-8 \cdot -3 \cdot 2)(x^3 \cdot x \cdot x)$

$48x^5$

7. $(-4p^4q^2)(7pq^5)$

$(-4 \cdot 7)(p^4 \cdot p)(q^2 \cdot q^5)$

$-28p^5q^7$

8. $(x^2yz^4)^3$

$(x^2)^3(y)^3(z^4)^3$

$x^6y^3z^{12}$

9. $(-bc^2)^5$

$(-1)^5(b)^5(c^2)^5$

$-b^5c^{10}$

Negative and zero Exponents

10. 5^{-2}

$\frac{1}{5^2}$

$\frac{1}{25}$

11. y^0

1

12. $a^{-8}(a^5)$

a^{-3}

$\frac{1}{a^3}$

13. $\frac{8c^{-7}d^{10}}{12c^{-4}d^{-9}}$

$\frac{8d^{10}d^9c^4}{12c^7c^{19}}$

$\frac{2d^{19}}{3c^3}$

FOIL

14. $(x-3)(x-6)$

$x(x)+x(-6)-3(x)-3(-6)$

$x^2 - 6x - 3x + 18$

$x^2 - 9x + 18$

15. $(2n-1)(n+5)$

$2n(n)+2n(5)-1(n)-1(5)$

$2n^2 + 10n - n - 5$

$2n^2 + 9n - 5$

16. $5a^2 - (2a+4)(3a-1) + 3a(a-5)$

FOIL, distribute

$5a^2 - (\text{trinomial}) + 3a^2 - 15$

change signs

Combine Like terms

Divide Polynomials by Monomials

17. $\frac{22m^6}{2m^2}$

$11m^4$

18. $\frac{16t^5 - 4t^2}{4t^2}$

$\frac{16t^5}{4t^2} - \frac{4t^2}{4t^2}$

$4t^3 - 1$

Translate verbal phrases: sum, difference, less than, quotient

always put: parentheses around polynomials

HOMEWORK

Worksheet - Final Review #2