

Date: _____

Unit 3: Polynomials3.1 Like Terms & DistributionRecall from Math 9

Term: An algebraic expression consisting of the product of a coefficient and one, or more, variable(s)

ex. $3x^2$, $-2xy$, z , $5x^0$ ^{coefficient}

Monomial: A one term expression.

ex. $2y^3$, $5x$, $2z$, $\frac{x}{2}$

Binomial: A two term expression.

ex. $2x + 3y$, $2x - 1$

Trinomial: A three term expression.

ex. $2x + yx^2 - 2$, $5x^2 + 7x^3 - 2x$

Degree: The largest exponent or exponent sum found in a term.

$\underbrace{2x}_{\text{degree}=1} + \underbrace{x^2y}_{\text{degree}=3} - \underbrace{2}_{\text{degree}=0}$ trinomial is degree 3

Like Terms: Terms that differ only by their coefficient. ie. terms with same variable(s) and respective exponent(s)

Ex. Simplify. State type and degree of each polynomial answer.

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

$\boxed{5x - 3y - 2}$ trinomial degree 1

b) $(x^2 + 4x - 3) - (x) + 2x^2$

$\boxed{3x^2 + 3x - 3}$

trinomial degree 2

c) $(-3x^2 + 2xy^2 + x^2 - 1) - 4x^2y + 5xy^2 + 3$

$= -4x^2y + 7xy^2 - 2x^2 + 2$

polynomial

degree 3

Distribution: To multiply a monomial with a polynomial, multiply each term of the polynomial by the monomial.

Ex. Simplify. State type and degree of each polynomial answer.

a) $3(5x + 2) = 3(5x) + 3(2)$ Binomial
 $= 15x + 6$ $D=1$

b) $5 - 2(x + 1)$ Binomial
 $= 5 - 2x - 2$
 $= -2x + 3$ $D=1$

c) $3x^2(2x^3 - 3x + 1)$ trinomial
 $= 6x^5 - 9x^3 + 3x^2$ $D=5$

d) $-3x^2y + 4y(2 - x^2) - 2y$ Binomial
 $= -3x^2y + 8y - 4x^2y - 2y$
 $= -7x^2y + 6y$ $D=3$

e) $(2x - 5z + y) - (7x + 4y - 2z)$ Trinomial
 $= 2x - 5z + y - 7x - 4y + 2z$
 $= -5x - 3y - 3z$ $D=1$

f) $4x(2x + 1) - (3x + 1) + (x^2 - 2)$ Trinomial
 $= 8x^2 + 4x - 3x - 1 + x^2 - 2$
 $= 9x^2 + x - 3$ $D=2$

Practice: Worksheets/ on sheet, write down answers & solve the puzzles to check