

Today's Plan:

Learning Target (standard): I will classify polynomials based on their degree and number of terms. I will combine like terms and put polynomials in descending order.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

NAME _____
#85

BELL RINGER

1.) Write an equation of the line that passes through the point (1, 2) and has a slope of -5.

$y = mx + b$
 $2 = -5(1) + b$
 $2 = -5 + b$ $b = 7$ $y = -5x + 7$

2.) Is $y = \sqrt{2} + 3x$ a linear function?

$y = 3x + \sqrt{2}$ $y = mx + b$ $x = \#$ $Ax + By = C$

3.) Solve $x - 4 = 3x + 7$.

$-3x \quad -3x$
 $-2x - 4 = 7$
 $-2x = 11$
 $x = -\frac{11}{2}$

0:03:00

Solve.

$$15 = 8x - 5 + 2x$$

$$15 = 10x - 5$$

$$20 = 10x$$

$$x = 2$$

Solve.

$$4c + 3(c - 2) = -34$$

$$4c + 3c - 6 = -34$$

$$7c - 6 = -34$$

$$7c = -28$$

$$c = -4$$

Solve.

$$(x-13)-(x-5)+2x=0$$

$$x-13-x+5+2x=0$$

$$2x-8=0$$

$$2x=8$$

$$x=4$$

Solve.

$$b-(1-2b)+(b-3)=-4$$

$$b-1+2b+b-3=-4$$

$$4b-4=-4$$

$$4b=0$$

$$b=0$$

Polynomials:

- A **monomial** is an expression (**term**) that is either a numeral, a variable, or the product of a numeral and one or more variables - there is NO addition and/or subtraction $3x$ $-4x^2y$ $2a^2b^3c^4$
- A **constant monomial** (constant) is a numeral 4 -6 8
- A **polynomial** is the sum and/or difference of monomials $4x^2+2x-6$ $8a^2b+3ab^2+5b+6$
- A **binomial** is a polynomial with two terms (separated with addition or subtraction) $-3x+7$ x^2+y^2 a^2b+bc
- A **trinomial** is a polynomial with three terms x^2+2x-4 $4x^3-7x^2+6x$

Polynomials:

- Monomials that are exactly alike or are the same except for their coefficients are said to be **similar** or **like terms**
- The **degree of a monomial** is the sum of the exponents on the variables $7x^3y^6z^1$ **degree = $3+6+1 = 10$**
- The **degree of a polynomial** is the greatest exponent on a term after the polynomial has been simplified $4x^5 - 2x^4 + 3x^6 - x + 2$ **degree: 6**
- A polynomial is in **descending order** the terms are written in alphabetical order from highest exponent to lowest

$$3x^6 + 4x^5 - 2x^4 - x + 2$$

Degree Names:

"polynomial"

- degree = 1 "linear"
- degree = 2 "quadratic"
- degree = 3 "cubic"
- degree = 4 "quartic"
- degree = 5 "quintic"

* Any degree over 5 is called the numerical degree

- 6th degree
- 7th degree

Naming Polynomials - degree, # of terms

Simplify.

"Combine like terms and write in descending order"

- If there are parentheses, look for a number or a subtraction sign in front of them and:
 - if so, distribute and then combine
 - if not, take off the parentheses

$$(3n^2 + 5n - 6) + (-n^2 - 3n + 3)$$

$$\underline{3n^2} + \underline{5n} - \underline{6} - \underline{n^2} - \underline{3n} + \underline{3}$$

$$2n^2 + 2n - 3$$

degree: **2**

name: quadratic trinomial

\ degree \ # of terms

Simplify.

$$(5x - 3t - 7) - (x - 2t - 3) \quad \text{degree: } 1$$

$$\underline{5x} - \underline{3t} - \underline{7} - \underline{x} + \underline{2t} + \underline{3}$$

name: linear trinomial

$$4x - t - 4$$

State the degree of the monomial.

$$2x^2y^5z^1 \quad \text{degree: } 8$$

$$2+5+1$$

$$-3m^4n^2p^3r^7 \quad \text{degree: } 16$$

$$4+2+3+7$$

$$4x^1y^1z^1 \quad \text{degree: } 3$$

$$1+1+1$$

Assignment:

Combining Like Terms #1-10