

**First Half of the Unit...** Polynomial Operations

Classifying Polynomials. Write the following polynomials in standard form.

Name them using the degree and number (#) of terms.

1)  $5x^2 - 3x^3 + 4$

2)  $x^4 + 2.2x^3 - 3.1x^2 + x - 10$

3)  $3x - 4$

Standard form

Standard form

Standard form

Degree \_\_\_\_\_

Degree \_\_\_\_\_

Degree \_\_\_\_\_

# of terms \_\_\_\_\_

# of terms \_\_\_\_\_

# of terms \_\_\_\_\_

**Learning Target:** I can Classify Polynomials by Degree and number of terms.How do you feel about **THIS** stuff?  
(circle one)

Got it!!

Kinda Got it...

Need help : (

**Simplify**

Add or subtract the following polynomials (Combine like terms). Write answer in standard form.

4)  $(4x^2 + 2) + (3x^3 + 2x^2 - 4x + 5)$

5)  $(10x^2 + 4x - 8) - (7x + 12)$

Multiply the following polynomials (Distribute everything). Write answer in standard form.

6)  $(x+3)(x-7)$

7)  $(2x^2 + 4x - 3)(2x - 5)$

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

**Learning Target:** I can simplify polynomials by adding, subtracting, and multiplying.How do you feel about **THIS** stuff?  
(circle one)

Got it!!

Kinda Got it...

Need help : (

**Second Half of the Unit...** Factoring Polynomials (and solving with ZPP)**Factor**

Write in factored form by dividing out out the greatest common factor (GCF)

9)  $20x^2 - 15x^4$

10)  $3x^4 + 9x^3 - 120x^2$

Factor by grouping (group first 2 and last 2 terms, find GCF of each)

11)  $x^3 + 2x^2 - 9x - 18$

12)  $3x^3 - 5x^2 - 27x - 45$

Factor the Trinomials (use the X to help split up the middle term, then grouping)

13)  $x^2 + 9x + 20$

14)  $x^2 + 3x - 40$

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

16)  $2x^2 - x - 6$

17)  $6x^2 + 6x - 36$

18)  $12x^2 - 6x + 42$

**Learning Target:** I can factor polynomials using GCF, Grouping, and X-box (trinomials)How do you feel about **THIS** stuff?  
(circle one)

Got it!!

Kinda Got it...

Need help : (

How do you feel about <b>THIS</b> stuff? (circle one)			
Got it!!	Kinda Got it...	Need help : (	

Solve the equations for  $x$  (factor first, then use ZPP)

19)  $(x + 4)(x - 3) = 0$

20)  $2x^2 - x = 0$

21)  $x^2 + 10x + 16 = 0$

22)  $9x^2 - 7x = -2$

23) Write an equation in factored form that has solutions of ...  $x = 3$ ,  $x = -1$ ,  $x = 4$ 

$(\text{_____})(\text{_____})(\text{_____}) = 0$

24) You throw a ball off the top of a building. The height  $h$  (in feet) of the ball above the ground is modeled by  $h = -16t^2 + 76t + 20$ , where  $t$  is the time (in seconds).

How long is the ball in the air before it hits the ground?

25) A rectangular box has a volume of  $72x$  cubic inches. The width of the rectangular box is  $x$  inches, the length is  $3x$  inches, and the height is  $(3x - 1)$  inches.

a. Write a polynomial that represents the volume of the box.

b. What are the dimensions of the box?

Learning Target: I can SOLVE equations with factoring and the Zero Product Property

How do you feel about **THIS** stuff?  
(circle one)

Got it!!

Kinda Got it...

Need help : (