

Name \_\_\_\_\_ Date \_\_\_\_\_

**UNIT 1 PACKET COHORT A  
FUNDAMENTALS OF ALGEBRA**

**Friday 10/2 Remote**

**-Watch the video lesson 1N1 and complete the guided notes.**

**-Complete HW Set#4 1N1**

**FUN 1 - N1**

**ALGEBRAIC EXPRESSION –**

**KEY WORDS TO WATCH FOR WHEN TRANSLATING:**

<b><u>ADD</u></b>	<b><u>SUBTRACT</u></b>	<b><u>MULTIPLY</u></b>	<b><u>DIVIDE</u></b>
sum	difference	product	quotient
more than	less than	of	
increased by	decreased by	double	
exceeds	fewer than	twice	
	reduced by	triple	

**\*\*\*\* Be careful when using LESS THAN, FEWER THAN, SUBTRACTED FROM – they reverse the order!!**

Write an algebraic expression for each:

1. the sum of  $x$  and 7
2. the product of  $g$  and 10
3.  $r$  decreased by 2
4. 3 less than  $w$
5. the product of  $5r$  and  $s$
6. twice  $x$ , decreased by 10
7.  $m$  exceeded by 5
8. 12 increased by the square of  $q$
9.  $t$  more than  $w$
10. 3 fewer than 6 times  $n$
11. 5 more than 3 times  $y$
12. 4 less than the square of  $n$
13. one-third of  $c$
14. 13 subtracted from half of  $r$

**\*\*\*When multiplying by a quantity (like a sum or difference),**

**you must use \_\_\_\_\_!!**

15. three times the sum of  $p$  and  $q$
16. twice the quantity  $x$  plus  $y$
17. one-fourth the quantity 16 less than  $n$

**Monday 10/5 In Class**

**-Lesson 1N2 and complete guided notes**

**-Complete HW Set#4 1N2**

**FUN 1 – N2**

**ALGEBRAIC EQUATION –**

**IS** means \_\_\_\_\_

Write an algebraic equation for each:

1. Twice  $x$  increased by 4 is 18
2. 4 less than  $a$  is 20
3. 3 times  $x$  is 4 more than the square of  $x$
4. 8 more than 4 times  $y$  is the same as 20
5.  $x$  reduced by 14 is the same as 6 more than twice  $x$

Write an algebraic equation and solve the equation.

6. Five more than six times a number is -1.

7. Two less than five times a number is 33.

8. Five less than three times a number is the same as nine more than the number.

9. Three-fourths of a number is 128.

**Tuesday 10/6 Remote**

**-Watch the video lesson 1N3 and complete guided notes**

**-Complete HW Set#4 1N3**

**FUN 1 – N3**

The **standard form** of a polynomial contains \_\_\_\_\_.

For example, the expression  $2x^2 + 3x - x - 7$  simplifies to

\_\_\_\_\_.

If a polynomial has more than one degree, express it in standard form by

writing its terms in \_\_\_\_\_ of

degree. In other words, the exponents should go from

\_\_\_\_\_ to \_\_\_\_\_.

For example, the polynomial  $4 + 5a^3 - 2a^6 - 3a$  written in standard form is

\_\_\_\_\_.

## ADDING POLYNOMIALS:

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

2.  $(15x^3 - 10x^2 + 14x) + (11x^3 + x^2 - 14x)$

3.  $(9x + 8y - 12z) + (-x - 10y + 11z)$

4.  $(4x^2 + 8x - 3) + (6x^2 - 10)$

5.  $(12a^5 + 4a^4 - 6a^3 - 15a^2) + (a^4 + 15a^2)$

6.  $(\frac{1}{3}x + \frac{2}{5}y + \frac{1}{2}) + (-\frac{5}{6}x - \frac{1}{2}y - \frac{3}{4})$

**Wednesday 10/7 Remote**

**-Watch video lesson 1N4 and complete guided notes**

**-Complete HW Set#4 1N4**

**HW Set#4 is due TOMORROW**

**FUN 1 – N4**

**SUBTRACTING POLYNOMIALS –**

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

2.  $(16a - 12b + 7c) - (a + 12b + 7c)$

3.  $(5x^2 + 2x) - (3x^2 - 9x)$

4. If  $A = 3x^2 + 5x - 6$  and  $B = -2x^2 - 6x + 7$ , then  $A - B$  equals

(1)  $-5x^2 - 11x + 13$

(2)  $5x^2 + 11x - 13$

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

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

What about this situation: Subtract 10 from 30.  
How would you write that?

5. Subtract  $7r^2 + 3r - 8$  from  $10r^2 - 3r - 7$ .

6. Subtract  $m^2 - 5m + 7$  from  $m^2 - 3m - 4$ .

7. Subtract  $12x - 6y + 9z$  from  $-x + 6y - 3z$ .

**Thursday 10/8**

**-Hand in HW Set#4**

**-Complete Unit 1 Practice #1**

**-Pick up HW Set#5**

**UNIT 1 – PRACTICE #1**

*Translate the following expressions.* (1 point each)

1. the product of  $x$  and 7

2. 8 less than  $x$

3.  $x$  exceeded by 9

4. 12 increased by 6 times  $x$

5.  $\frac{2}{3}$  of  $x$

6.  $x$  reduced by 14

7. 10 more than twice  $x$

8. 13 less than 8 times  $x$

9. two times the quantity 6 less than  $x$

10. twice the sum of  $x$  and  $y$

*Translate the following equations.* (1 point each)

11. 8 less than 3 times  $x$  is 16

12. the square of  $x$  is 64

*Add the following polynomials. Write your answers in standard form.*  
(3 points each)

13.  $(15x - 26y + 8z) + (3x - 14y - 3z)$

14.  $(-9a + 8c) + (3a - 8c)$

15.  $(x^2 - 33x + 15) + (-4x^2 + 18x - 36)$

***Subtract the following polynomials. Write your answers in standard form.***  
(4 points each)

16.  $(4r - 7s) - (5r - 7s)$

17.  $(x^2 - 6x + 5) - (3x^2 - 2x - 2)$

18. Subtract  $9r - 7b$  from  $6r - 7b$ .

19. Subtract  $-a^2 - 5a + 3b^2$  from  $3a^2 - 2a + 3b^2$ .

**Friday 10/9 Remote**

**-Unit 1 Quiz-complete and scan/take a picture and send to us**

**Tuesday 10/13 Remote**

**-Watch video lesson 1N5 and complete guided notes**

**-Complete HW Set#4 1N5**

**FUN 1 – N5**

**MULTIPLYING MONOMIAL BY POLYNOMIAL:**

1.  $-5x(x^2 - 2x + 4)$

2.  $-3a^2b^2(4ab^2 - 3b^2)$

3.  $-x^7(x^2 - 2)$

4.  $-x^3(7x - 5y)$

**MULTIPLYING POLYNOMIALS:**

5.  $(x + 5)(x + 2)$

6.  $(a-3)(a+7)$

7.  $(y+6)(y-2)$

8.  $(x+3)(x-3)$

**Wednesday 10/14 in class**

**-Lesson 1N6 and complete guided notes**

**-Complete HW Set#5 1N6**

**-HW Set #5 is due tomorrow**

**FUN 1 – N6 Multiplying Polynomials Day 2**

1.  $(x - 7)(x + 2)$

2.  $(y + 7)(y - 7)$

3.  $(2x + 1)(x - 6)$

4.  $(c - 5)(2c - 4)$

5.  $(3d+8)(3d-8)$

6.  $(2x+3)(x-4)$

7.  $(3n+5)(2n+7)$

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

**Thursday 10/15 in class**

**-Hand in HW Set#5**

**-Complete lesson 1N7 and the guided notes**

**FUN 1 – N7**

Divide:

1.  $\frac{30x^6}{2x^4}$

2.  $\frac{-21a^5b^4}{-3a^4b}$

3.  $\frac{12y^2z^2}{4y^2z}$

4.  $\frac{72a^{11}b^{14}c^{64}}{72a^{11}b^{14}c^{64}}$

**DIVIDING A POLYNOMIAL BY A MONOMIAL:**

The rule is:

For example:  $\frac{6x^4 + 3x + 12}{3}$  means:

Examples:

$$5. \quad \frac{5x^3 + 2x^2 - 8x}{x}$$

$$6. \quad \frac{5y^3 + y}{y}$$

$$7. \quad \frac{12x^2y + 18xy}{6xy}$$

$$8. \quad \frac{8x^3 + 6x^2 - 2x}{2x}$$

$$9. \quad \frac{20m^2n + 25}{5}$$

**Friday 10/16 Remote**

**-Complete Unit 1 Practice #2**

**-Send/submit a picture/scan of Unit 1 Practice #2**

**-Correct Unit 1 Practice #2 with posted key**

**Unit 1 Practice #2**

*Multiply the following. Write your answers in standard form.* (3 points each)

1.  $x(x^5 + x^3 - x)$

2.  $a^3(3a^5 + 2a^2 - a)$

*Multiply the following polynomials. Write your answers in standard form.*  
(4 points each)

3.  $(y+1)(y-1)$

4.  $(2x-3)(x+10)$

5.  $(2x+1)(10x+13)$

*Divide the following polynomials. Write your answers in standard form.*  
(3 points each)

6. 
$$\frac{18x^4 - 9x^2 + 27x}{9x}$$

7. 
$$\frac{14x^4 + 7x^3}{7x^3}$$

8. 
$$\frac{15a^{10} + 25a^5 - 5a}{5a}$$

Monday 10/19 in class

-Complete & correct Unit 1 Study Guide

**-Unit 1 Test is tomorrow**

### Unit 1 Study Guide

#### 1 - N1

1. Mr. Stanton asked his students to write an algebraic expression on a piece of paper. He chose four students to go to the board and write their expression.

Robert wrote:  $4(2x + 5)$

Meredith wrote:  $3y - 7 + 11z$

Steven wrote:  $9w + 2 = 20$

Ann wrote:  $8x^2 - 10x$

Which student was *incorrect*?

- (1) Robert      (2) Meredith      (3) Steven      (4) Ann
2. Which verbal expression can be represented by  $2(x - 5)$ ?
- (1) 5 less than 2 times  $x$
- (2) twice the sum of  $x$  and 5
- (3) twice the difference of  $x$  and 5
- (4) the product of 2 and  $x$ , decreased by 5

3. The length of a rectangle is 3 more than twice its width. If  $w$  represents the width, write an algebraic expression to represent the length.

**1 – N2**

4. Write an equation for the following statement:

Eight times a number decreased by 7 is 33.

Solve this equation.

**1 – N3**

5. Express the sum of  $3x^3 + 8x^2 - x - 7$  and  $4x^3 - 2x^2 + x + 10$ .

**1 – N4**

6. Find the difference:  $(a^2 + a - 3) - (3a^2 - 5)$

7. Subtract  $5x^2 + 2x - 11$  from  $3x^2 + 8x - 7$  and express your answer as a trinomial.

**1 – N5**

8. Find the product of  $4x^2$  and  $3x^2 - 7x + 5$

9. Multiply:  $(x - 1)(x + 12)$

**1 – N6**

10. Multiply:  $(3x + 5)(x - 6)$

**1 – N7**

11. If  $A = 63x^2 + 7x$  and  $B = 7x$ , what is  $\frac{A}{B}$ , in standard form?

**Tuesday 10/20 Unit 1 Test remote**