# Remote Learning Packet

*NB: Please keep all work produced this week. Details regarding how to turn in this work will be forthcoming.*

**April 6ᵗʰ - April 10ᵗʰ, 2020**
**Course**: Algebra I
**Teacher(s)**: Mr. Mapes steven.mapes@greatheartsirving.org
　　　　　　　Ms. Frank leslie.frank@greatheartsirving.org

**Weekly Plan**:

Monday, April 6
☐ Chapter 3, Extra Practice: Skills, page 644: Problems 54-72, mod 3
☐ Chapter 3, Problem Solving, page 668 sect. 3-7 #2, 4, 6 and 3-8 #2, 4

Tuesday, April 7
☐ Chapter 4, Extra Practice: Skills, page 645-646: Problems 20-102, mod 4
☐ Chapter 4, Problem Solving, page 669 sect. 4-9 #2, 4 and 4-10 #2-4

Wednesday, April 8
☐ Chapter 5, Extra Practice:  Skills, page 647: Problems 15-60, mod 3
☐ Chapter 5, Problem Solving, pages 669-670 (5-13) "Solve" #1-3

Thursday, April 9
☐ Chapter 5, Extra Practice:  Skills, pages 648: Problems 63-135, mod 3
☐ Chapter 5, Problem Solving, page 670 (5-13) "Solve" #4-6

Friday, April 10
☐ Chapter 7, Extra Practice:  Skills, page 651-652: Problems 9-63, mod 3
☐ Chapter 7, Problem Solving, page 671  (7-3, 7-4 and 7-5) "Solve" 2 and 4 for each section

## Statement of Academic Honesty

I affirm that the work completed from the packet
is mine and that I completed it independently.

I affirm that, to the best of my knowledge, my
child completed this work independently

_____
Student Signature

_____
Parent Signature

# For all review assignments

If you're having difficulty remembering how to do the problems, **the lesson in which they were taught is posted on the right side of the page.** Turn back to that lesson and review it for help (if you have the textbook / I have also attached highlights of the chapter below). If you have reviewed the lesson and still don't understand, continue on to the next problem, until you have tried to work each one. Use lined loose-leaf paper and show all of your work and make sure to include a heading for each assignment. If you need to double check your work (for challenging problems) look at the answer key that is provided, and check all of your answers once you have finished the entire assignment. As always, feel free to email me during the schooldays with questions.

## Monday, April 6$^{th}$
Things to remember from Section 3-4 to 3-7

We are solving the majority of problems in this unit by isolating the variable, balancing the equations through inverse operations and checking our answers. More complex equations should be simplified on both sides before proceeding through these steps.

There will be possibilities of equations in which you will no solution (empty or null set when simplified), and equations that will be true for every value of the variable (identity)

For the word problems always remember to make a chart or a sketch before trying to solve the problem.

## Tuesday, April 7$^{th}$
Things to remember from Section 4-2 to 4-8

**Adding and Subtracting Polynomials**

Monomial - an expression that is either a numeral, variable, or the product of a numeral and one or more variables

Constant (monomial) - a numeral such as 14

Polynomial - a sum of monomials

Special types - Binomials have two terms ex. $2x - 9$    $2xy + x^2$
Trinomials have three terms ex. $x^2 - 3x - 10$    $a^2 + 3ab - 4b^2$

Numerical coefficient - a numeral that is multiplied by a variable

Similar or Like Terms - monomials that are exactly alike except for their coefficients

Simplest form of a polynomial - when no two terms of a polynomial are similar or like terms

Degree of a variable in a monomials - the number of times that a variable occurs as a factor in a monomial

Degree of a monomial - the sum of the degrees of all of its variables

Degree of a polynomial - the greatest of the degrees of its terms after it has been simplified

**Rules for Powers of Monomials**
Rule of exponents for a power of a power

For all positive integers $m$ and $n$ :   $(a^m)^n = a^{mn}$

To find a power of a power, you multiply the exponents.

**Multiplying Polynomials by Monomials**

Remember the distributive properties….

$a(b+c) = ab + ac$      and      $a(b-c) = ab - ac$

# Wednesday, April 8th
Things to remember from Section 5-3 to 5-5

Terms and Definitions

Property of Quotients - If *a, b, c,* and *d* are all real numbers with $b \neq 0$ *and* $d \neq 0$
$$\frac{ac}{bd} = \frac{a}{b} \cdot \frac{c}{d}$$

If $a = b$, *and b, c,* and *d* are all real numbers with $b \neq 0$ *and* $d \neq 0$, *then*

$$\frac{bc}{bd} = \frac{c}{d}$$

Rule of Exponents for Division- If *a* is a nonzero real number and *m* and *n* are positive integers, then

| If $m > n$ : | If $n > m$ : | If $m = n$ : |
|---|---|---|
| $\frac{a^m}{a^n} = a^{m-n}$ | $\frac{a^m}{a^n} = \frac{1}{a^{n-m}}$ | $\frac{a^m}{a^n} = 1$ |

The CGF of two or more monomials is the common factor with the greatest coefficient and the greatest degree of each variable.

A quotient of monomials is said to be simplified when each base appears only once, when there are no powers of powers, and when the numerator and denominator have no common factors other than 1.

Remember  $\frac{a+b}{c} = \frac{a}{c} + \frac{b}{c}$

To divide a polynomial by a binomial, divide each term of the polynomial and add the results.

We say that one polynomial is evenly divisible, or just divisible, by another polynomial if the quotient is also a polynomial (not a fraction).

The greatest monomial factor of a polynomial is the GCF of its terms.

## Thursday, April 9th

Things to remember from Section 5-6 to 5-12

### Factoring Check List

I.   Factor out the Greatest Common Factor
II.  Look for a resulting pattern

Binomial -   $a^2 - b^2 = (a - b)(a + b)$

| | |
|---|---|
| Trinomial (+c)<br>Square of a Binomial<br>Look for middle term (linear) twice a x b | $a^2 + 2ab + b^2 = (a + b)^2$<br>$a^2 - 2ab + b^2 = (a - b)^2$ |

Trinomial $(+ c)$     $x^2 + bx + c$

Look for the factors (both positive or both negative) of $c$ that add up to $b$

Trinomial $(- c)$     $x^2 (+ \text{ or } -) bx - c$

Look for the factors $(+ - \text{ or } - +)$ of $c$ that add up to $b$

## Friday, April 10th

Things to remember from Section 7-2 to 7-9

Definition of $a^{-n}$
If $a$ is a nonzero real number and $n$ is a positive integer,
$a^{-n} = \frac{1}{a^n}$

Definition of $a^0$
If $a$ is a nonzero real number,
$a^0 = 1$
The expression $0^0$ has no meaning.

Summary of Rules of exponents (let $m$ and $n$ be any integer, and let $a$ and $b$ be any nonzero integers)

1. Products of powers     $b^m b^n = b^{m+n}$
2. Quotients of powers    $b^m \div b^n = b^{m-n}$
3. Power of a power       $(b^m)^n = b^{mn}$
4. Power of a product     $(ab)^m = a^m b^m$
5. Power of a quotient    $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$