Timberlane Regional High School

Summer Packet 2019-2020

The purpose of this summer work is to help prepare you for your upcoming math class. The work will tap into your prior knowledge and review past content, concepts, and skills. Our expectation is that you arrive on the first day of school able to demonstrate mastery of the material in this packet. In order to achieve this, please allow yourself plenty of time to work on the problems, use your resources (such as the review materials provided, Khan Academy, or the math faculty here at the school during the summer to specifically *help with the summer work (July 15–Aug 15th on Tues and Wed from 8:30 to 10:30 by appointment)*), and work each problem to completion.

This work will be due on **Thursday, September 5th and Friday, September 6th**, and will be 3% of your first quarter grade. 10% will be deducted for each day it is late. Summer work will not be accepted after Sept. 12th. Each math problem in the packet will be graded as follows:

Summer Work Assignments	Grading	Evidence	Perseverance
You may complete the Written Packet (found on page 2 through 12)	One and a half points will be awarded per problem attempted. One point will be awarded for each correct answer.	Students will show all necessary work for credit.	Students will show their work when solving a problem. If they are struggling, they will seek out extra help.

Your teacher might choose to give a non-graded assessment on the first week of school in order to target remediation strategies and requirements.

A note from your Finite teacher:

This packet will help you to sharpen your skills and be ready for the first day of the 2018-2019 school year. These problems shouldn't take too long. HAVE A GREAT SUMMER!!!!

Summer Work Topics for Finite Math-

a. Order of Operations
b. Graphing Linear Equations
c. Writing Linear Equations
d. Graphing Linear Inequalities
e. Graphing Systems of Inequalities
f. Solving Linear Systems
g. Multiplying Polynomials
h. Solving Quadratic Equations

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Order of Operations

Directions: Simplify the following expressions. SHOW ALL WORK!

1. $2(4+(-1))\cdot(2\cdot-4)$

2. $3 \times (2-5)$

3. $3\left(\frac{-2\cdot3^2}{-(4-1)^2}\right)^2$

4. $3\left(1-\left(-\frac{1}{2}\right)^2\right)^2+1$

5. $\frac{2/3}{5}$

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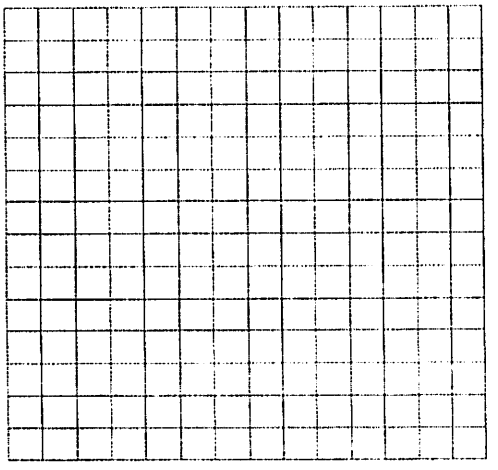
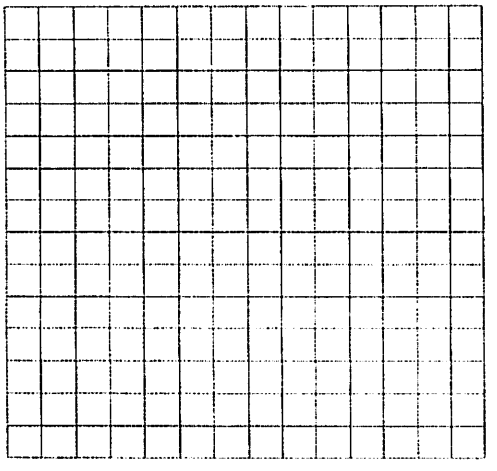
Graphing Linear Equations:

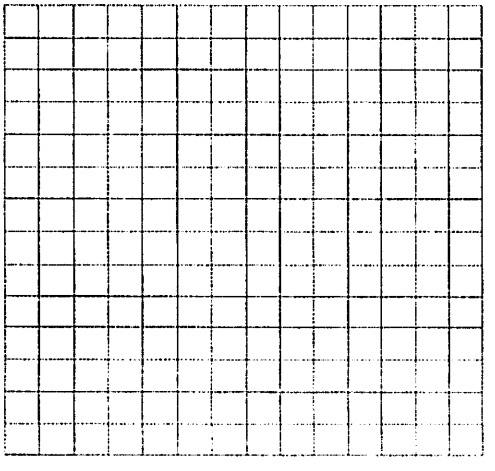
1. Graph the following: $y = 2x - 1$



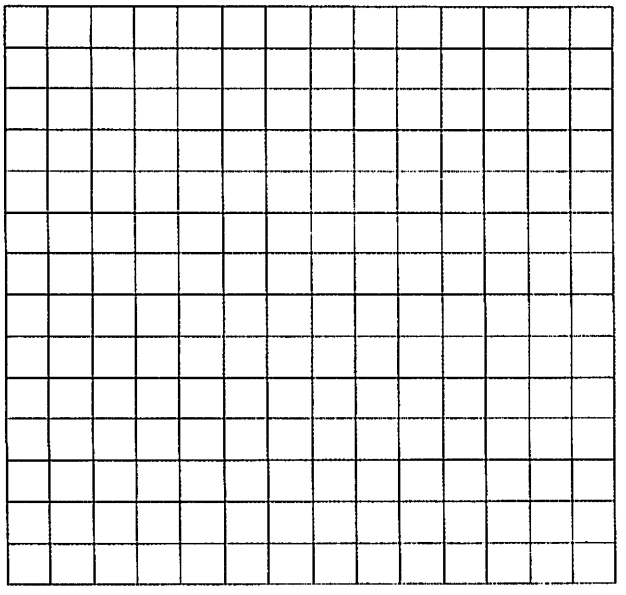
2. Graph $y + \frac{1}{4}x = -4$



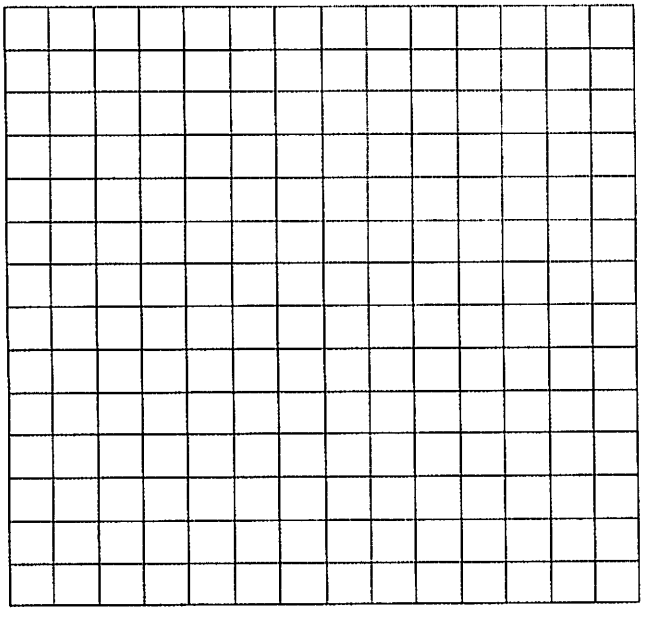
3. Graph $2x + 3y = -6$



4. Graph $x = 3$



5. Graph $y = -5$



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Writing Linear Equations

Find a linear equation whose graph is the straight line with the given properties:

1. Passes through (1,3) with a slope of 3

2. Passes through (2,1) with a slope of 2

3. Passes through (2, -4) and (1,1)

4. Passes through (1,-4) and (-1,-1)

5. Passes through (6,6) and parallel to the line $x + y = 4$

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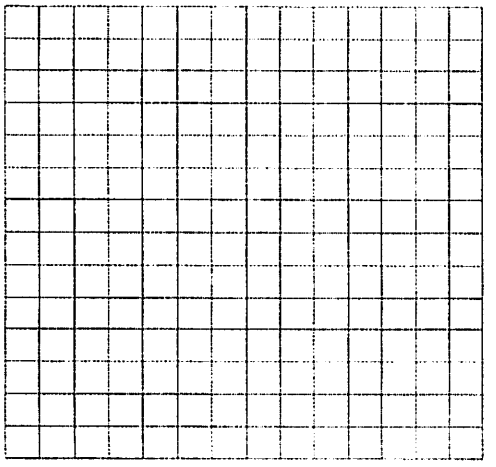
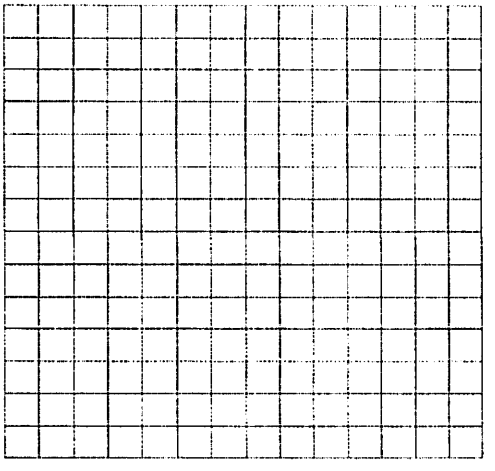
Graphing Linear Inequalities:

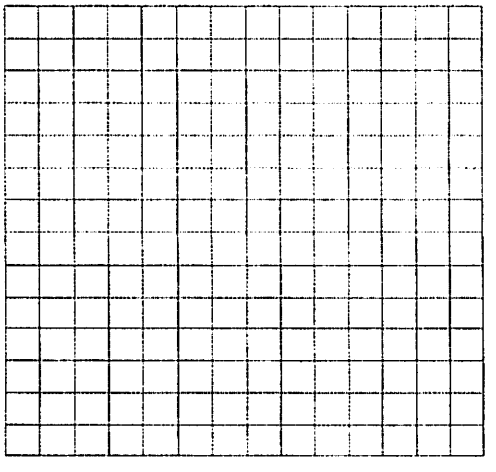
1. Graph the following: $y \leq 3x + 1$



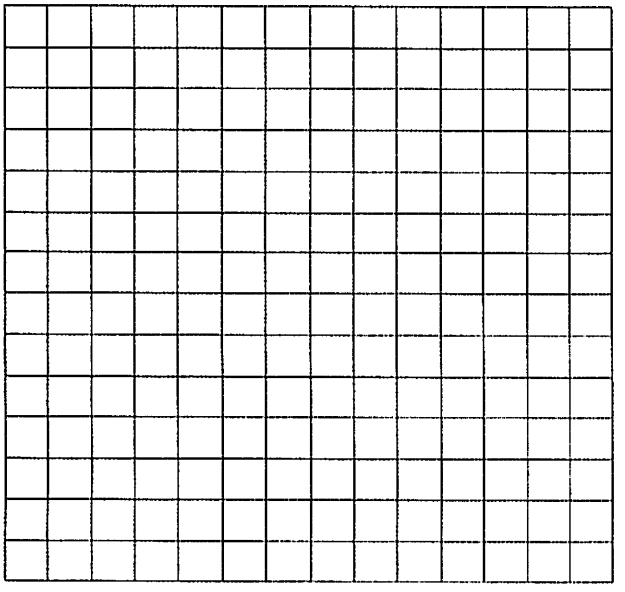
2. Graph $3x - y > -2$



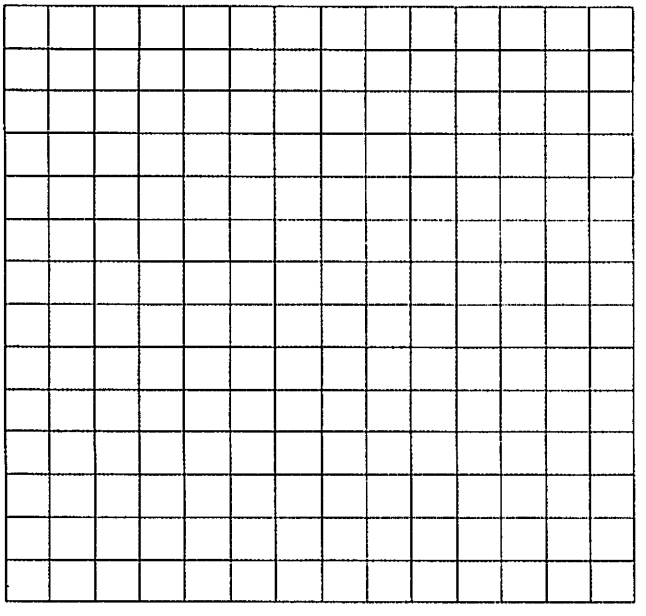
3. Graph $3x + 5y \geq -15$



4. Graph $x < -5$



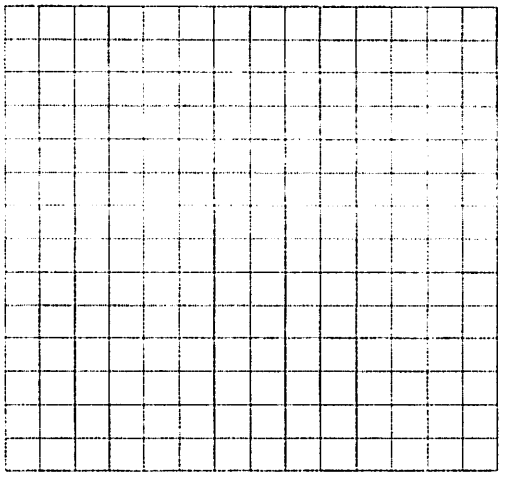
5. Graph $y \geq -2$



Graphing Systems of Linear Inequalities:

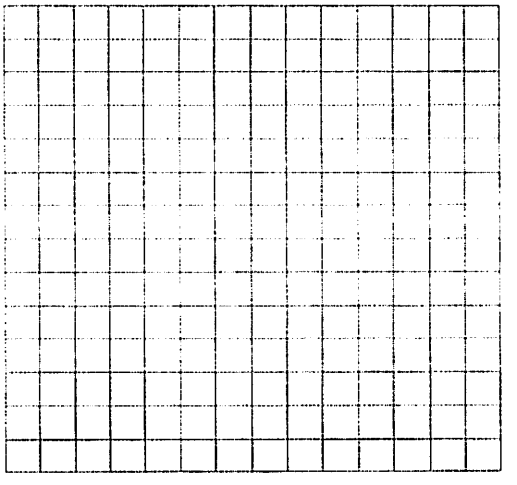
1. Graph the following:

$y < 2x - 4$
$y > -x + 5$



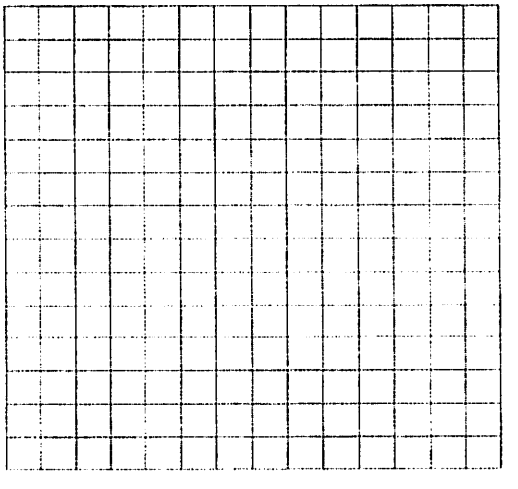
2. Graph the following:

$y + \frac{1}{4}x > -4$
$y < 3x - 3$



3. Graph the following:

$2x - 4y \leq 8$
$y < 5$

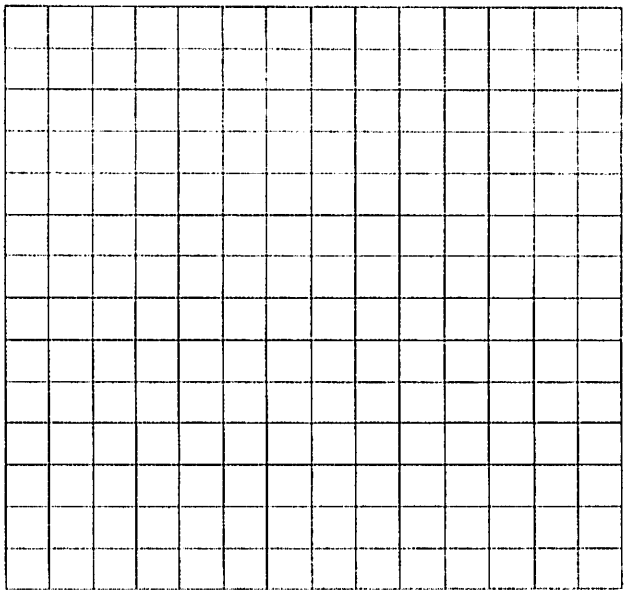


4. Graph the following:

$y \leq -\frac{1}{2}x - 2$

$x \geq -3$

$y \geq 1$

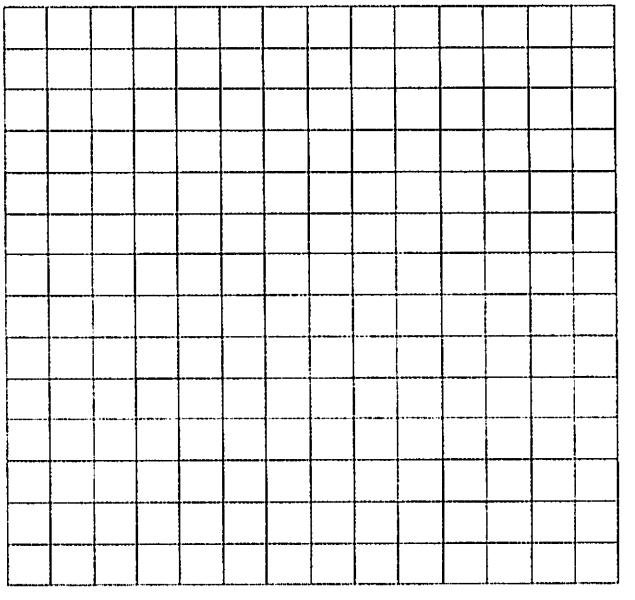


5. Graph the following:

$y \leq -x + 4$

$y \leq -2x + 6$

$y \geq 0, x \geq 0$



Solving Systems of Linear Equations

1. $x + y = 6$
   $x - y = 4$

2. $y = 3x + 3$
   $y = -\frac{3}{2}x + 3$

3. $5x - y = 4$
   $2x - y = 1$

4. $2x + 3y = 12$
   $5x - y = 13$

5. $2x + 4y = 10$
   $3x + 5y = 11$

Multiplying Polynomials: Expand each expression

1. $x(4x + 6)$

2. $(2y + 3)(y + 5)$

3. $\left(x + \frac{1}{x}\right)^2$

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

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

Solving Polynomial Equations: By any method, determine all possible real solutions for each equation.

1. $2x^2 + 7x - 4 = 0$

2. $2x^2 - 5 = 0$

3. $\frac{1}{2}x^2 - x - \frac{3}{2} = 0$

4. $16x^2 = -24x - 9$

5. $x^3 + 6x^2 + 11x + 6 = 0$