Name: _____ Date: _____

Summer 2018 Algebra II Packet

The goal of summer math is to ensure that students are prepared for their high school math classes. The skills learned in elementary and middle school are an integral part of success at the high school level, and this packet covers many of the important concepts that students entering high school should have mastered.

All students entering Algebra II must complete this math packet over the summer. It is due Friday, August 31, 2018 (or the first day you are in school). Packets will **not** be accepted late.

You will receive one grade for this packet of 100% for completing **all** of the problems. **Be sure to show all work** to complete the problems.

In your Algebra II class, you will not be using a calculator regularly. Therefore, there is **NO CALCULATOR USE ALLOWED ON THE SUMMER PACKET**. Additionally, all students will be taking a pretest the first day of school on the information covered in this math packet, and students will not be allowed to use a calculator on the pretest either.

For more practice on these skills, use the following internet sources:

www.purplemath.com
www.khanacademy.com

If you lose your packet, there is a copy on the website www.northprovidencehighschool.net under "Forms".

Good luck and have a great summer!
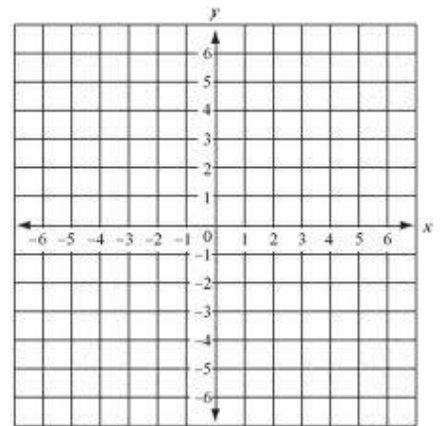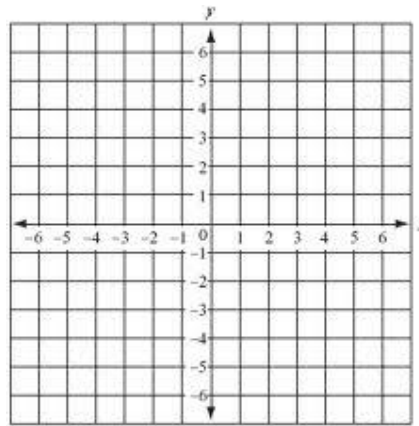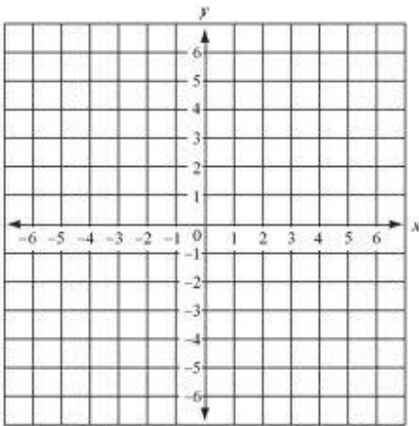
SYSTEMS: GRAPHING, SUBSTITUTION, AND ELIMINATION.

State the solution for each type of systems of equations. Possible solutions: 1) a point, (x, y), 2) infinite number of solutions, 3) no solution.

Graph each system and determine the number of solutions that it has. If it has one solution, name it.

1) $y = 3x - 3$
   $y = 3x + 2$

2) $x - y = -3$
   $2x - y = -4$

3) $2x + 2y = 6$
   $y = -x + 3$

Use substitution to solve the system of equations.

4) $y = 4x - 6$
   $5x + 3y = -1$

5) $5x - y = 5$
   $-x + 3y = 13$

Use elimination to solve the system of equations.

6) $-4x + 3y = -3$
$\quad 4x - 5y = 5$

7) $8x + 3y = -7$
$\quad 7x + 2y = -3$

MULTIPLYING POLYNOMIALS

1) Simplify the expression
$(-4xy)(3x^3y^7)$

2) Solve the equation
$x^2(2x + 3) = x(2x^2 + 3x + 1)$

3) Find the product
$(3a - 2)(9a + 5)$

4) Simplify the expression
$(4x^2)^3(x^2)^4$

5) Simplify the espression
$2p(-4p^2 + 5p) - 5(3p^2 + 20)$

6) Find the product
$(8c + 3d)^2$

FACTORING: Factor the following trinomials

1) $x^2 - 7x - 30$

2) $m^2 - 15m + 50$

3) $5x^2 + 13x + 6$

4) $3a^2 + 11a - 4$

5) $4x^2 + 38x + 70$

6) $2y^2 - 9y + 3$

Solve each equation. A check is a good way to know if you have the correct solution.

1) $8c + 7 = 5c + 16$

2) $\dfrac{6b-7}{10} = \dfrac{b}{4}$

3) $33 = 3(r + 4)$

4) $-2(g - 3) - 4 = 18$

5) $12 - \dfrac{4}{5}(x + 15) = 4$

6) $4(3m - 2) = 8(2m + 3)$

7) $7x + 5(x - 1) = -5 + 12x$

8) $6x - (3x - 8) = 20$

8) Solve for v.

$\dfrac{5}{9}v + w = z$