Applied Algebra I
Summer Math Assignment

June 2016

Dear Parent(s) or Guardian(s):

Your child is currently scheduled to take Applied Algebra I next year. The curriculum builds on concepts that were introduced in previous courses in middle school and high school. All students entering this course will be expected to complete a math packet this summer. Please be sure that your child brings the completed packet to school on the first day. Teachers will check the packet and each student will receive a grade based on completion.

The purpose of students completing this packet is two-fold. First, is to keep math skills at the same level or higher than when the school year ended. Second, is to help students and teachers identify the prerequisite concepts and skills that each student has and has not mastered. It is expected that students will attempt all problems in the packet. If your child is having difficulty with any of the problems, please encourage him/her to use the list of websites at the bottom of this letter.

It is important that each student attempt each problem and show work. By attempting to solve each problem, and communicating their thinking in writing, students provide a way for teachers to identify and remedy any misconceptions more efficiently. Since the concepts and skills that are taught in all mathematics courses follow a progression, identifying each student's strengths and weaknesses is essential in order to develop new learning in the subsequent course.

The mathematics department thanks you for your support and wishes you and your family a happy and restful summer!

Sincerely,

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Some good websites – there are specific links in packet for each topic. An electronic copy of this packet can be found on Ms. Hardy's webpage under documents etc Summer Work 2016. Also linked on her calendar on June 14 entry.
Coolmath.com
Khanacademy.org
Mathsisfun.com

APPLIED ALGEBRA I – SUMMER PACKET

WORKING WITH INTEGERS - DO THE FOLLOWING PROBLEMS _WITHOUT A CALCULATOR!_ For help go to http://www.coolmath.com/prealgebra/08-signed-numbers-integers

6) ADDITION OF INTEGERS

a) - 5 + -9   b) -12 + 5   c) 7 + -3   d) -9 + 9   e) - 4 + -3 + 5 + -6

7) SUBTRACTION OF INTEGERS

a) 10 – 11   b) -9 – 8   c) -5 – (-4)   d) 8 – (-2)   e) -6 – 3 – (-5)

8) MULTIPLICATION OF INTEGERS

a) -4 (5)   b) -3 (-2)   c) $(-3)^2$ d) -2 (-4)(-3)   e) $(-2)^3$

9) DIVISION OF INTEGERS

a) -15 ÷ 3   b) -24 ÷ -8   c) 18 ÷ -6   d) 36 ÷ 9

PREALGEBRA CONCEPTS

10) EVALUATE USING ORDER OF OPERATIONS – show work! No calculators
 for help go to http://www.coolmath.com/prealgebra/05-order-of-operations

a) 9 + 3 • 2   b) 5 • 3 + 4 • (-3)

11) Evaluate the following expressions for x = 3 and y = -4 show work! No calculators

   a) x + y

   b) 5x

   c) $\dfrac{xy}{2}$

SOLVING EQUATIONS http://www.coolmath.com/prealgebra/16-intro-to-solving-equations

12) **SOLVE ONE STEP EQUATIONS** (show work on both sides – be careful with signs) You may use a calculator to do the computation work.

a) -2x = -36

b) x – 7 = -12

c) $\dfrac{m}{-4}$ = -8

d) m + 4 = - 18

13) **SOLVE TWO STEP EQUATIONS** Show solving steps (undo addition or subtraction first, don't lose signs!) You may use a calculator to do the computation work.

a) -3n – 5 = 16

b) 5x + 2 = -18

c) $\dfrac{h}{3} - 7 = -4$

MORE **SOLVE TWO STEP EQUATIONS** Show solving steps. (undo addition or subtraction first, don't lose signs!) You may use a calculator to do the computation work.

d) $10 + 4x = 34$ e) $7 - 2x = 5$ f) $38 = 5x - 2$

SIMPLIFYING EXPRESSIONS There are a series of videos on Khan Academy that can help you with these concepts https://www.khanacademy.org/math/algebra-basics/core-algebra-expressions/core-algebra-manipulating-expressions/v/combining-like-terms

14) **SIMPLIFY BY COMBINING LIKE TERMS** for help go to http://www.mathsisfun.com/algebra/like-terms.html

a) $5m + 6m$ b) $3x - 7x$ c) $2a + 8a + a - 5a$

15) **SIMPLIFY BY USING THE DISTRIBUTIVE PROPERTY** You may use a calculator to do the computation work.

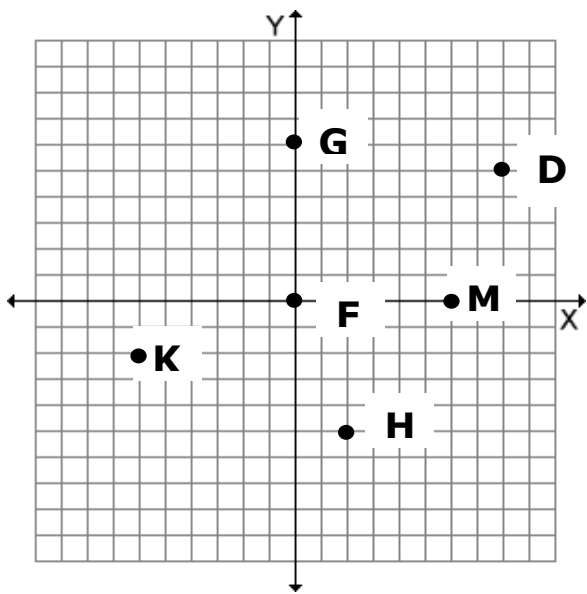a) $3(x + 8)$ b) $4(2x - 3)$ c) $-5(3x + 4)$

d) $-(x + 3)$ e) $6(2 - x)$ f) $-2(x - 7)$

THE COORDINATE PLANE for help go to http://www.coolmath.com/algebra/08-lines/02-plotting-points-01

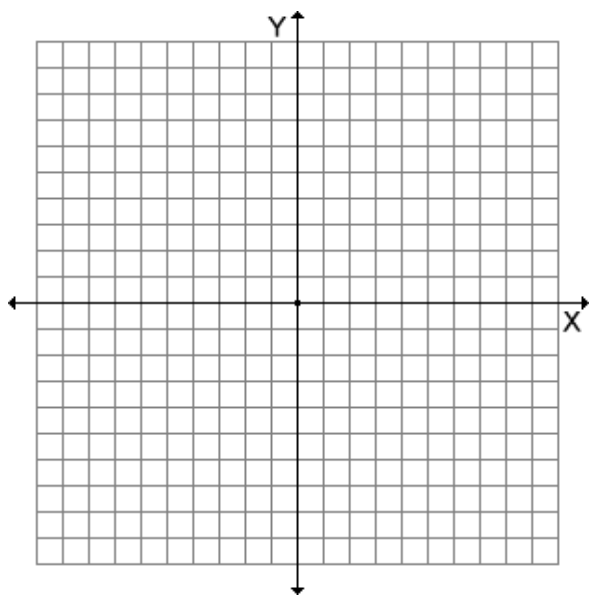16) Name the given points on this coordinate plane with ordered pairs (x, y)

a) **D** _____

b) **F** _____

c) **G** _____

d) **H** _____
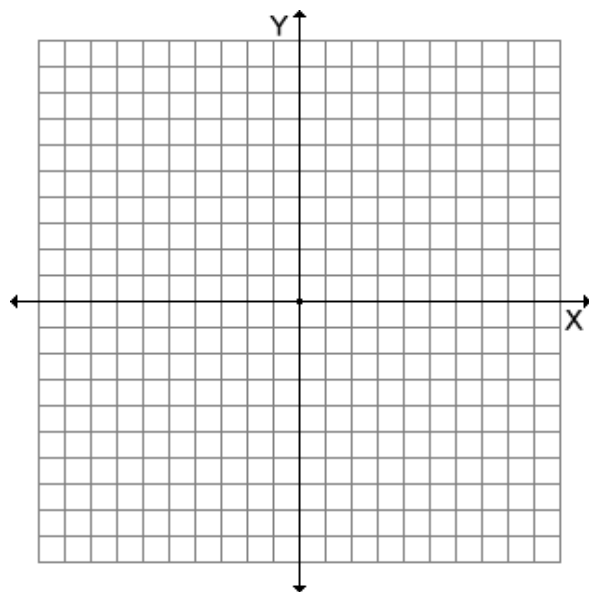
e) **K** _____

f) **M** _____

17) Plot the following points on the given coordinate plane (label with the letter given)

A (0, -5) B (-7, -2) C (3, 0) D (8, -1) E (-2, 5)

18) Graph the following points in the chart as ordered pairs. Connect the points to make a line.

X	Y
-3	6
0	0
1	-2
4	-8

PROBLEM SOLVING – there are many ways to solve these. Show your work or explain your reasoning so we can see what you were thinking while you solved them.

1) Al, Joe, Carl and Dave were standing in line. Dave was not first. Joe was between Al and Carl. Al was between Dave and Joe. In what order were they standing?

2) Jill got into an elevator. She went down five floors, up six floors, and down seven floors. She was then on the second floor. Where did he get on?

3) How many rectangles can you count in the figure below? Consider all sizes of rectangles, they can overlap!