



NORTH HAVEN HIGH SCHOOL

221 ELM STREET
NORTH HAVEN, CT 06473

Applied Algebra I Summer Math Assignment

June 2015

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 remind him/her to use the list of websites in the packet as a resource. If he/she is still having difficulty please remind him/her to write what he/she thinks the answer is and show all the work that was done to arrive at that answer. Students will find that by attempting to solve each problem, and communicating their thinking in writing, teachers will be able 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,

Tracey Romberg

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APPLIED ALGEBRA I – SUMMER PACKET

BASIC MATH CONCEPTS

1) Simplify the fractions

a) $\frac{8}{12} =$

b) $\frac{10}{20} =$

2) Convert these fractions into decimals:

a) $\frac{1}{2} =$

b) $\frac{3}{4} =$

c) $\frac{1}{4} =$

3) Multiply fractions – answers must be in simplest form.

a) $\frac{3}{4} \times \frac{1}{3} =$

b) $\frac{7}{12} \times \frac{6}{21} =$

4) Divide fractions – answers must be in simplest form.

a) $\frac{2}{3} \div \frac{1}{2} =$

b) $\frac{3}{8} \div \frac{6}{7} =$

5) Add or Subtract fractions – answers must be in simplest form.

a) $\frac{5}{8} + \frac{3}{8} =$

b) $\frac{3}{5} + \frac{1}{4} =$

c) $\frac{5}{6} + \frac{3}{8} =$

d) $\frac{9}{14} - \frac{1}{14} =$

e) $\frac{4}{5} - \frac{1}{2} =$

f) $5\frac{2}{3} + 1\frac{3}{4} =$

WORKING WITH INTEGERS

DO THE FOLLOWING PROBLEMS WITHOUT A CALCULATOR!

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) $-15 \div 3$

b) $-24 \div -8$

c) $18 \div -6$

d) $36 \div 9$

PREALGEBRA CONCEPTS

10) EVALUATE USING ORDER OF OPERATIONS – show work! No calculators

a) $9 + 3 \cdot 2$

b) $5 \cdot 3 + 4 \cdot (-3)$

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

a) $x + y$

b) $5x$

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

12) **SOLVE ONE STEP EQUATIONS** (show work on both sides – be careful with signs)

a) $-2x = -36$

b) $x - 7 = -12$

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

d) $m + 4 = -18$

13) **SOLVE TWO STEP EQUATIONS** (undo addition or subtraction first, don't lose signs!)

a) $-3n - 5 = 16$

b) $5x + 2 = -18$

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

14) **SIMPLIFY BY COMBINING LIKE TERMS**

a) $5m + 6m$

b) $3x - 7x$

c) $2a + 8a + a + (-5a)$

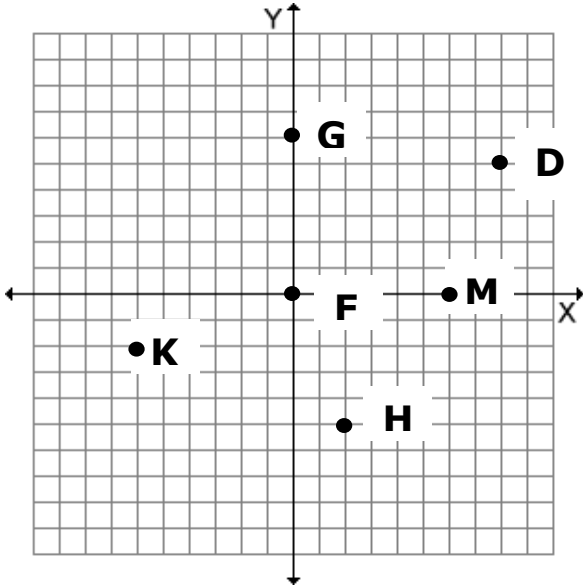
15) **SIMPLIFY BY USING THE DISTRIBUTIVE PROPERTY**

a) $3(x + 8)$

b) $4(2x - 3)$

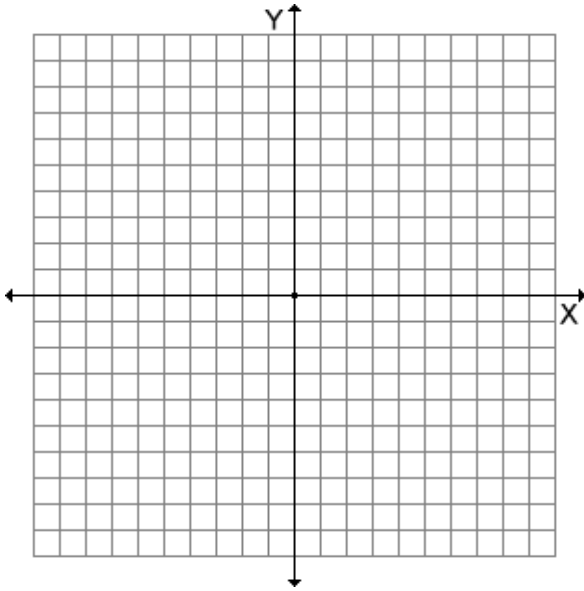
c) $-5(3x + 4)$

THE COORDINATE PLANE



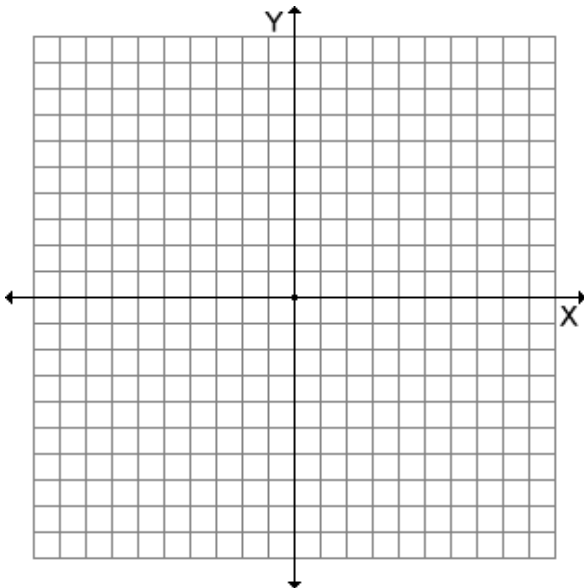
16) Name the given points on this coordinate plane with ordered pairs (x, y)

- 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

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!



Need Help/More Practice?

Please visit the following websites for tutorial help on concepts and skills in this packet. You can also get more practice of the skills on these websites.

www.aaamath.com

www.coolmath.com

www.khanacademy.org

www.brightstorm.com

www.IXL.com